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SECOND SERIES.

Volume II.

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Milton Updegraff	*Professor of Mathematics, U. S. N.*
William S. Eichelberger	*Professor of Mathematics, U. S. N.*
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ZONE OBSERVATIONS

WITH THE

NINE-INCH TRANSIT CIRCLE.

1894–1901.

BY

AARON N. SKINNER,

ASSISTED BY

FRANK B. LITTELL and THEO I. KING.

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VOLUME CONTAINS:—Pages XXVIII + 525—Total, 553 pp.

ERRATA.

VOLUME FOR 1883.

Page xxxii, fifth line: For 1882 read 1883.
Page xxxii, seventh line: After 1881 strike out and. After 1882 insert and 1883.
Page 3, fourth line from bottom of page: For east read west.
Page 8, No. 15, ninth column: For 82° read 83°.
eleventh column: For +7′ 48″.0 read +8′ 56″.3.
fourteenth column: For 134° 14′ 42″.3 read 135° 15′ 50″.6.
fifteenth column: For −23″.9 read −24″.0.
Page 11, No. 5: Strike out whole line, including bottom of page.
No. 4, bottom of page, column Semi-diam.: For +14″.0 read +10″.5.
column Sum: For +4″.8 read +1″.3.
Page 12, No. 1, tenth column: For +4′ 36″.29 read +4′ 20″.99.
eleventh column: For +3′ 48″.2 read +4′ 4″.6.
fourteenth column: For 126° 14′ 38″.0 read 127° 14′ 39″.1.
fifteenth column: For −23″.4 read −23″.6.
Page 20, No. 10, third column: For Cor. Bor. (R) read Comae Ber. (R).
No. 11, third column: For Coronae Borealis read Comae Berenices.
Page 24, No. 17, third column: For Coronae Borealis read Comae Berenices.
Page 29, No. 31, third column: For Cor. Bor. (R) read Comae Ber. (R).
No. 32, third column: For Coronae Borealis read Comae Berenices.
Page 32, No. 3, third column: For Coronae Borealis read Comae Berenices.
Page 37, No. 20, sixth column: For 12$^{\rm s}$.45 read 12$^{\rm s}$.83.
twelfth column: For 46$^{\rm s}$.85 read 47$^{\rm s}$.23.
Page 78, No. 36, seventh column: For +0$^{\rm s}$.12 read +0$^{\rm s}$.10.
ninth column: For 355° read 356°.
eleventh column: For −4″.7 read −3″.6.
twelfth column: For 50$^{\rm s}$.94 read 50$^{\rm s}$.92.
thirteenth column: For −5$^{\rm s}$.26 read −5$^{\rm s}$.21.
fourteenth column: For 46° 40′ 9″.4 read 47° 40′ 10″.5.
fifteenth column: For +31″.8 read +31″.6.
Page 171, B. A. C. 377, Dec. 6: For 45$^{\rm s}$.68 read 45$^{\rm s}$.71.
For 46° 40′ 41″.2 read 47° 40′ 42″.1.

VOLUME FOR 1884.

Page xxxi, tenth line: For I read V.
eleventh line: For II read VI.
twelfth line: For III read VII.
thirteenth line : For IV read VIII.
Page 99, No. 29, tenth column: For +3′ 34″.23 read +3′ 38″.83.
fourteenth column: For 23″.7 read 28″.3.
Page 120, No. 44, tenth column: For +3′ 21″.87 read +5′ 55″.77.
eleventh column: For +37″.9 read +38″.0.
fourteenth column: For 83° 36′ 32″.5 read 83° 39′ 6″.5.
Page 261, κ^2 Sculptoris, Nov. 8: For 39″.5 read 44″.1.
Mean: For 43″.16 read 44″.08.
Page 268, Anonymous 3$^{\rm h}$ 58$^{\rm m}$ 39$^{\rm s}$.71: For 36′ 36″.0 read 39′ 10″.0.
Page 303, No. 8, eighth column: For 45″.9 read 46″.8.
Page 308, No. 213, eighth column: For 36′ 38″.8 read 39′ 12″.8.

VOLUME FOR 1885.

Page 251, Lalande (F) 3436, Mean: For 55″.55 read 59″.55.
Page 269, No. 395, eighth column: For 26″.2 read 36″.2.
Page 282, No. 938, eighth column: For 53″.2 read 57″.2.

VOLUME FOR 1886.

Page xxxix, third line: For I read V.
fourth line: For II read VI.
fifth line: For III read VII.
sixth line: For IV read VIII.
Page 19, No. 43, ninth column: For 5″.70 read 6″.95.
tenth column: For 46″.28 read 43″.12.
fourteenth column: For 24″.1 read 22″.2.
fifteenth column: For +0″.5 read −1″.4.
No. 45, tenth column: For 31″.95 read 31″.41.
fourteenth column: For 5″.3 read 4″.7.
fifteenth column: For +0″.3 read −0″.3.
No. 47, tenth column: For 16″.90 read 16″.04.
fourteenth column: For 15′ 0″.7 read 14′ 59″.8.
fifteenth column: For +0″.7 read −0″.2.
Page 33, No. 24, fourteenth column: For 96° read 91°.
Page 220, Apr. 22, ninth column: For 96° read 91°.

VOLUME FOR 1892, APPENDIX I.

Page 227, No. 1979, tenth column: For 52° read 53°.

VOLUME I—SECOND SERIES.

Page xv, twenty-fifth line, substitute: Let A_m=the azimuth of the north mark west of north multiplied by sin Z.
Page lix, Jan. 4, third column: For 2^h.178 read 1^h.403.
fifth column: For +0^s.0255 read +0^s.0293.
For −0^s.0189 read −0^s.0173.
Page lxxxiv, third column, first line: For 38° 56′ read 321° 6′.
eighth column, first line: For 38° 56′ read 321° 6′.
Page lxxxv, third column, first line: For 38° 56′ read 321° 6′.
eighth column, first line: For 38° 56′ read 321° 6′.
Page lxxxvi, third column, first line: For 38° 56′ read 321° 6′.

VOLUME II—SECOND SERIES.

Page 3, No. 32, tenth column: For (55° 6′) read 55° 6′.
Page 6, sixth line: Insert 23.5 under 23.5 of fifth line.
Page 17, No. 2, twelfth column: For 4^h 13^m 53^s.47 read [4^h 13^m 53^s.47].
Page 60, No. 8, second column: For 9.2 read ......
Page 63, under "Note": For 8. close double. read 8. close double, magnitudes 9.2, 9.2.
Page 110, No. 118, thirteenth column: For 18° 2′ read 17° 42′.
Page 117, No. 37, thirteenth column: For 16° 16′ read 16° 17′.
Page 121, No. 88, thirteenth column: For 16° 46′ read 16° 45′.
Page 126, No. 32, twelfth column: For 53^s 47 read 53^s.41.
Page 129, No. 6, thirteenth column: For 14° read 16°.
Page 149, No. 149, thirteenth column: For 14° read 16°.
Page 165, No. 58, thirteenth column: For 14° read 16°.
No. 63, eleventh column: For 41.635 read (44).635.
thirteenth column: For 29′ 22″.16 read 30′ 19″.25.
Page 167, under "Notes": Insert 63. Telescope Micrometer changed three revolutions. See Zone 139. Observation with Six-Inch Transit Circle Dec. 17, 1901, gave $\delta=-14^\circ\ 30'\ 18''$.
Page 172, No. 85, eleventh column: For 44.470 read (41).470.
thirteenth column: For 36′ 24″.89 read 35′ 27″.32.
No. 97, tenth column: For 53° 53′ read 53° 52′.
thirteenth column: For 15° 0′ 45″.59 read 14° 59′ 45″.54.

Page 173, under "Note": Insert 85. Telescope Micrometer changed three revolutions. See Zone 147. Observation with Six-Inch Transit Circle Jan. 4, 1902, gave $\delta = -16^\circ\ 35'\ 30''$.

Page 181, No. 3, thirteenth column: For 15° 46′ read 15° 45′.

Page 182, No. 78, thirteenth column: For 15° 49′ 40″.30 read 15° 48′ 40″.25.

Page 188, No. 60, twelfth column: For $42^s.07$ read $42^s.08$.

thirteenth column: For 36′ 54″.33 read 33′ 54″.17.

Page 190, No. 8, thirteenth column: For 17° 46′ read 17° 45′.

Page 201, No. 111, thirteenth column: For 16° read 17°.

Page 202, No. 147, thirteenth column: For 48″ read 48″.00.

Page 250, No. 44, twelfth column: For $7^h\ 55^m$ read $7^h\ 54^m$.

No. 67, thirteenth column: For 16° read 15°.

Page 457, No. 41, thirteenth column: For −15° 49′ 48″.25 read [−15° 49′ 48″.25].

INTRODUCTION.

Under the date of May 10, 1887, Dr. ARTHUR AUWERS, president of the Astronomische Gesellschaft, extended an invitation to the Naval Observatory to participate in the observation of the stars to the ninth magnitude in the zones —2° to —23°, which undertaking was a continuation of a similar work from —1° to +80°, then in course of execution under the auspices of this society. In his letter to the Superintendent Dr. AUWERS says, "Since the European observatories from which participation was to be expected lie too far north for a great part of these zones, the cooperation of the better-placed North American observatories is in a high degree desired." In reply to this invitation under date of May 24, 1887, the superintendent, Capt. R. L. PHYTHIAN, U. S. N., stated that the Naval Observatory would gladly undertake the observation of a zone of 5°.

Under the date of January 13, 1888, a letter was received from Dr. AUWERS, announcing the limits of the zone which the Naval Observatory was requested to observe, as follows:

> I would request you, therefore, in conformity with the programme in the Vierteljahrsschrift der Astronomischen Gesellschaft, Band IV, Seite 304 et seq., and using the zero stars tabulated in the V. J., Band XV, Seite 273 et seq., to have observed with the meridian circle:
>
> 'All the stars to the ninth magnitude, inclusive, which, according to the fourth volume of the Bonn Durchmusterung, Bonner Beobachtungen, Band VIII, are found between the parallels —13° 50′ and —18° 10′ (for the equinox of 1855); and, in addition, all stars of less magnitude than the ninth, which also are contained in the zone observations of LALANDE, BESSEL, ARGELANDER, or LAMONT.'
>
> It will exceed somewhat the programme of the Gesellschaft, but will simplify the preparation of the working list almost as much as it may increase the extent of the observations if, instead of the latter class of stars, you will include in the programme of observation simply:
>
> All stars below the ninth magnitude which are indicated in the Bonn Durchmusterung as having been previously observed at any place.
>
> I should like to recommend this all the more for the Washington zone, as the stars added will mostly be such as are contained in the older Washington zones.

Prof. J. R. EASTMAN, U. S. N., then in charge of the PISTOR & MARTINS Transit Circle immediately entered upon the preparations necessary for the execution of the work and in the selection of the stars for observation adopted the suggestion of Dr. AUWERS above quoted of enlarging regular programme. Various circumstances prevented the commencement of the observations until after the removal to the recently completed Naval Observatory on Georgetown Heights, when Assistant Astronomer A. N. SKINNER entered upon the prosecution of the work. The working list prepared by Professor EASTMAN was found to embrace 8,689 stars, thus making an average of 362 for every hour. The actual density of the stars varied throughout the hours of right ascension from 7 hours which contained 669 stars to 0 hours which contained only 251 stars. To facilitate the work a card catalogue was made, which embodied on a card for each star all the necessary data from the Durchmusterung with blank spaces for the final observed positions, thus permitting easy reference to the details of observation of each star.

The observations are comprised in 236 zones, in all of which the observer at the telescope was Professor SKINNER, except in zones 218, 219, and 226 to 231, inclusive, in which Assistant Astronomer KING performed that duty. The following table exhibits the number of observations comprised in the entire work:

Observer.	Zone stars.	Zero and azimuth stars.
SKINNER.............	19581	2050
KING................	235	82
Total...........	19816	2132
Grand total................		21948

With a very few exceptions an assistant was present whose duty it was to set the circle, read the two microscopes, and make all the records. Except for six zones the place of assistant was filled either by FRANK B. LITTELL or THEO I. KING. The assistant for zones 227 to 231, inclusive, was GEORGE K. LAWTON; for zone 226, JOHN C. HAMMOND.

Professor SKINNER acknowledges his indebtedness to Prof. FRANK B. LITTELL and Assistant Astronomer THEO I. KING for their valuable assistance in connection with the observations and reductions from the beginning of the work nearly to the time of publication; and also to Prof. W. S. EICHELBERGER, who has supervised the revision of the printer's copy and personally superintended the proof reading.

The first type proof has been read from the original records. All proofs beyond the first have been read only to assure the insertion of the corrections desired, except that in the final plate proof the columns headed *Mag.*, *α 1900.0*, *δ 1900.0*, and *B. D.* have been read entire.

Attention is called to the list of errata for this volume on pages VIII and IX immediately preceding this introduction.

PLAN OF THE WORK.

The instrument used was the PISTOR & MARTINS Transit Circle, a complete description of which is found in Publications of the United States Naval Observatory, Second Series, Volume I, pages VII to X. The repairs made in the fall of 1899 were carried out in accordance with the statement detailed on page X above mentioned. The changes and repairs here noted were for the purpose of removing certain defects which existed in the instrument. In addition to the items mentioned in this volume, it was noticed during the latter part of the zone work that determinations of the level constant by the spirit level and nadirs gave evidence of pivot irregularities resulting probably from wear. The pivots were examined in 1900, the earliest time practicable, with the spherometer caliper, and these measurements confirmed the existence of pivot irregularities of such a character as to render impracticable the application of corrections to the observations. The only remedy is to provide new pivots. Since zero stars have been selected near the parallel of the stars to be determined, it is thought that these instrumental defects will not seriously affect the positions. In reference to the right ascensions, it is much to be regretted that the rate of the observing clock was not at all times as regular as could have been desired.

The plan of the work was made to conform to the published programme of the Astronomische Gesellschaft, V. J. S., Band IV, Seite 304 et seq. In conformity with a suggestion from Dr. AUWERS, Professor SKINNER decided to read two microscopes in the observation of both zone stars and zero stars. The positions of the zone stars are differentially referred to the catalogue of 303 zero stars selected for the southern zones and published in V. J. S., Band XV, Seite 273 et seq., and the definitive places published in Anhang II Berlin Jahrbuch, 1901.

The scheme of observation involved the following details:

One observation of each zone star in each clamp of the instrument. With few exceptions this was accomplished up to January 4, 1896. After this date, as the instrument was principally devoted to other work, it was not deemed advisable to continue this plan.

The reading of two opposite microscopes with each zero star and each zone star.

The observation of each zero star over eleven transit threads and each zone star over five threads.

The making of four bisections with the zenith distance micrometer in case of a zero star and one bisection in case of a zone star.

Usually a group of four zero stars was observed at the beginning of a zone and a similar group at the end. In the case of many zones zero stars were observed during the progress of the zone.

Except in case of a few of the brightest stars an estimation of the magnitude was made conforming as nearly as possible to the Argelander scale. The observer at the telescope was not furnished with any intimation in reference to the brightness of a star unless the Durchmusterung magnitude showed that it was near the limit of visibility. The result of these estimates seemed to be reasonably self-satisfying for stars of the 8.0 magnitude and fainter. For brighter stars the estimates appear to be very much less accordant. A comparison of the observed magnitudes with those of the Durchmusterung enabled Professor SKINNER to detect the variability of four stars during the progress of the zone observations, viz:

B. D. −14° 2893 = X Hydrae.
B. D. −18° 3975 = RT Librae.
B. D. −16° 5811 = Z Capricorni.
B. D. −15° 6531 = W Ceti.

In the progress of the work several stars were observed not included in the adopted programme. Some of these stars are in the Durchmusterung and some are anonymous. All of these observations have been reduced and are printed in the journals of the zones. For convenience of reference the positions of the anonymous stars have been collected in the following table:

Observations of anonymous stars.

Observed Mag.	α 1900.0			δ 1900.0			Zone.
	h	m	s	°	′	″	
9.1	1	47	36.92	−15	26	34.02	152
9.0	2	54	32.64	−17	8	15.00	81
9.5	3	57	44.82	−16	20	52.48	1
9.3	4	55	29.69	−16	54	59.91	159
10.0	5	56	34.12	−14	31	31.36	12
8.6	6	15	7.25	−15	3	55.09	14
9.0	7	5	31.91	−18	3	14.00	91
. .	7	12	13.49	−14	40	42.44	9
9.5	7	16	45.00	−16	7	31.64	23
9.1	7	26	37.40	−14	45	49.41	25
. .	7	35	0.03	−16	25	7.41	158
9.8	8	28	16.75	−16	39	21.26	228
9.3	15	32	7.23	−15	19	55.53	53
9.5	18	20	47.71	−16	50	13.86	61
9.4	20	31	43.42	−17	12	1.21	71
9.0	20	54	24.76	−17	50	48.00	73

THE RIGHT ASCENSIONS.

All the transits were observed chronographically. The arrangement of the transit threads is shown in Table I at the end of this introduction. The method of deriving the instrumental constants is described in Publications of the United States Naval Observatory, Second Series, Volume I. In brief these constants were determined in the following manner:

The azimuth constant.—For zones 1 to 182 and for zone 184 the azimuth constant was determined by means of the circumpolar stars noted in the reduction tables appended to each zone under the head, *Derivation of the Clock Correction and Equator Point.* For zone 183 and zones 185 to 236 the azimuth constant was derived by means of the north meridian mark as described in the volume above cited.

The collimation constant.—The collimation constant, which includes the correction for diurnal aberration, was determined at the time of observation by means of the horizontal collimators.

The level constant.—For zones 1 to 96 and 185 to 236 the level constant was determined by means of the hanging spirit level. For zones 97 to 184 this constant was determined at the nadir by means of the mercury horizon.

Ordinarily one set of constants was determined at the beginning and another at the end of a zone, the mean of which designated as adopted in the reduction tables, was used for both zero stars and zone stars. The constants determined and adopted may be found in the reduction elements for each zone.

THE DECLINATIONS.

The circle used in these observations is the one designated in the description of the instrument as Circle A. This circle retains the original Pistor & Martins divisions. The instrument was set on the nearest even minute and the subdivision of the 2′ interval of the circle graduation was effected by the telescope micrometer. This micrometer is furnished with five zenith threads, two of which are about 8″ apart and are always referred to as the double threads. The line bisecting the space between them is the line of reference for all zenith distance micrometer readings. At a distance of about ten revolutions from the double threads toward the micrometer head is a thread termed A, at the same distance on the other side of the double threads is a thread termed B, and at about the same distance beyond B is a thread termed C. A Rogers self-registering apparatus is attached to the head of the zenith distance micrometer screw, enabling the observer to make as many as five bisections which may be recorded at leisure. For a description of this device see Astronomische Nachrichten, Band 63, Seite 77.

The microscopes used in the zone observations were as follows:

Microscopes.	Zones.
VI and VIII	1— 95 166—184
II and IV	96—155 157—165
I and III	156 185—221
V and VII	222—236

The adopted value of one revolution of the zenith distance micrometer screw is as follows:

	″
From January 13 to October 20, 1894	19.020
From October 31, 1894, to September 27, 1897	19.176

A worn condition of the screw made necessary the adoption of a variable value of the revolution for the period January 27 to July 30, 1900, as is shown in Table IIb.

	″
From October 9, 1900, to April 29, 1901	19.1782
From August 2 to October 10, 1901	19.1742

An equator point was deduced from the observation of each zero star and the mean was usually adopted as the equator point of the zone, but in a few zones the equator point was assumed to vary with the time.

The zero stars were selected with the view of having the mean of their declinations fall within the limits of the zone of observation, thus rendering practically insensible the effect of division error and flexure. Consequently no correction for division error or flexure has been introduced.

At the end of this introduction are the following tables:

TABLE I.—The equatorial thread intervals. The values in these tables are the intervals from the mean of groups b, c, and d.

TABLE IIa and IIb.—The adopted values of the readings of the zenith distance micrometer.

TABLE III.—The corrections for inclination and distance of the zenith distance threads. For the zenith distance threads A, B, and C the table gives the reduction to the double threads combined with the correction for the inclination of the double threads.

TABLE IV.—The reduction to meridian.

TABLE V.—The precession in declination 1894.0 to 1900.0.

TABLE VI.—The precession in declination 1895.0 to 1900.0.

EXPLANATION OF THE PRINTED PAGES.

The names of the observer and assistant are noted at the head of each zone.

In the journal of each zone:

The column *No.* gives the number of the zone star in the night's work.

The column *Mag.* gives the magnitude of the star as estimated by the observer.

The five columns headed *Transits* give the seconds and tenths of the transit time of each of the five transit threads observed.

The column *Gr.* gives the group of transit threads used or the limiting threads in case parts of two groups were used.

The column *Mean Thread* gives the minutes, seconds and hundredths of the mean of the several transit times reduced to the standard mean thread.

The column *Circle Reading* gives the observed circle reading for the two microscopes used. The microscopes used in the zone work are designated in this introduction under the title *The Declinations.* When two or more stars were observed at one circle setting, the microscope readings are printed only with the first star of the setting.

The column *Telescope Micrometer* gives the following particulars:

1. The vertical thread at which the bisection was made.
2. The zenith distance thread used in making the bisection.
3. The complete reading of the zenith distance micrometer.

The column *α 1900.0* gives the observed right ascension reduced to the epoch 1900.0.

The column *δ 1900.0* gives the observed declination reduced to the epoch 1900.0.

In the columns *α 1900.0* and *δ 1900.0* brackets indicate results discordant, and therefore not considered in determining the necessary number of observations.

The column *B. D.* gives the Bonn Durchmusterung number for the star observed.

Under the heading *Reduction of the Declinations of the Zero Stars* appear:

1. The name of the star.
2. The circle reading giving the mean of the two microscopes read.
3. The complete reading for each of the bisections with the zenith distance micrometer.
4. The micrometer equivalent for the mean of the several micrometer readings.

5. The reduction to meridian.
6. The correction for inclination and zenith distance thread.
7. The correction for refraction.

Under the heading *Derivation of the Clock Correction and Equator Point:*

The column *Name of Star* gives the name of the zero stars and azimuth stars.

The column *Mean Thread* gives the mean of the times of the several transit threads reduced to the standard mean thread.

The column *No. Thds.* gives the number of the observed transit threads.

The column *Instr. Cor.* gives the value of Aa+Bb+Cc.

The column *Clock Cor.* gives the observed clock correction, brackets indicating values not used.

The column *Reduced C. R.* gives the sum of the quantities designated 2, 4, 5, 6, and 7 under *Reduction of the Declinations of the Zero Stars.*

The column *Equator Point* gives the seconds and tenths of the equator point derived from each zero star. The degrees and minutes may be readily supplied from the adopted equator point. Brackets indicate values not used in forming the adopted equator point.

The following reduction elements are also given:

The adopted clock correction and rate.

The adopted equator point.

The meteorological observations under the following headings:

B indicates barometer.

t indicates attached thermometer.

T indicates external thermometer.

The readings of the barometer and external thermometer have been corrected for errors of scale, which have been determined by careful comparison with the standards of the UNITED STATES WEATHER BUREAU by courtesy of Prof. C. F. MARVIN. The attached thermometer readings have not been corrected for scale error.

In connection with the meteorological data for each zone, in a few cases occurs the designation "Meteorological Journal," which refers to the observatory journal of meteorological readings taken by the watchman every three hours. The instruments are located as follows: The barometer in the hall on the first floor of the main building, and the thermometer in a shelter south of the entrance to the main building.

Under the heading *Reduction Tables for the Zone Stars* appear the following tables which were prepared with equi-distant intervals of the arguments for zones 1 to 164 and 185 to 215.

Tables.	Arguments.
Instrumental Corrections=Aa+Bb+Cc	Circle Reading.
A = reduction of right ascension to 1900.0. D = reduction of zenith distance to the beginning of the year.	FOR ZONES 1–95. Apparent right ascension and reduced circle reading which includes correction for refraction.* FOR ZONES 96–164 AND 185–215. Apparent right ascension and true zenith distance which is reduced circle reading with zenith point correction applied.†
R = refraction........................	Apparent right ascension and reduced circle reading not corrected for refraction.

---

*In computing BESSEL'S Star-constants, the zenith point correction −1′ 30″ has been assumed. The greatest variation from this on any night was 21″.

†In Zones 185–215, the zenith point correction whose maximum value was −1′ 11″ has been neglected. The maximum error resulting is in right ascension $0^s.001$, and in declination $0''.01$.

For zones 165 to 184 and 216 to 236 the same quantities are tabulated for each zone star except that $D =$ the reduction to 1900.0.

Parentheses inclose matter which has been supplied as not existing in the original record or is the result of change from the original record. These omissions or changes are of the following classes:

The designation of the transit threads used.

The vertical thread at which the micrometer bisection was made.

The thread of the zenith distance micrometer used in bisecting.

The degrees and minutes of the circle reading.

It has been the policy not to make changes of a fraction of a revolution of the zenith distance micrometer reading although an accordant result might follow such changes; for example, changes founded upon the theory of a mistake in the record caused by a similarity of the figures 3 and 5 on the graduated head; an exceptional case, an instance of a change of a half revolution may be found in zone 102, star 117; but parentheses are used to indicate an interchange of the micrometer readings of two stars or the change of one or more revolutions of the zenith distance screw.

The following are two examples of the application of the tabular quantities in reduction:

	Zone 95, Jaunary 31, 1895, Clamp East, B. D.—13°3476.			Zone 96, February 26, 1895, Clamp West, B. D.—14°951.		
	h	m	s	h	m	s
Mean thread	11	51	26.75	4	39	41.82
Instrumental correction			+ 1.11			+ 0.25
Clock correction			—23.86			—33.81
Reduction to 1900.0			+14.11			+13.00
α 1900.0	11	51	18.11	4	39	21.26
	°	′	″	°	′	″
Circle reading	52	56	9.65	306	24	9.65
Micrometer equivalent		+ 6	31.31		+ 4	43.64
Reduction to meridian		+	1.61		+	0.02
Inclination and thread		—	2.64		+	0.18
Refraction		+ 1	22.15		— 1	21.23
Reduction to 1895.0		—	4.25		+	1.65
Reduction 1895.0 to 1900.0		+ 1	40.19		+	34.60
Sum	53	5	38.02	306	28	8.51
Equator point	38	56	54.78	321	6	18.66
δ 1900.0	—14	8	43.24	—14	38	10.15

TABLE I.—*The Equatorial Thread Intervals.*

Vertical Thread.	Jan. 13, 1894, to Oct. 20, 1894.	Oct. 31, 1894, to Jan. 31, 1895.	Feb. 26, 1895, to Jan. 4, 1896.	June 29, 1896, to Sept. 27, 1897.	Jan. 27, 1900, to Nov. 12, 1900.	Nov. 21, 1900, to Oct. 10, 1901.
	s	s	s	s	s	s
I	+36.709	+37.010	+37.081	+37.010	+37.090	+37.046
a_1	32.070	32.306	32.469	32.306	32.495	32.331
a_2	30.349	30.568	30.544	30.568	30.543	30.576
a_3	28.490	28.683	28.756	28.683	28.754	28.706
a_4	26.600	26.802	26.970	26.802	26.969	26.797
II a_5	24.510	24.678	24.734	24.678	24.714	24.682
III b_1	12.223	12.334	12.388	12.334	12.389	12.356
b_2	9.694	9.782	9.718	9.782	9.727	9.775
b_3	8.164	8.227	8.236	8.227	8.227	8.237
c_1	4.118	4.136	4.154	4.136	4.163	4.143
c_2	2.114	+ 2.112	2.078	+ 2.112	2.090	+ 2.119
IV c_3	+ 0.002	− 0.017	+ 0.017	− 0.017	+ 0.032	− 0.032
c_4	− 2.054	2.078	− 2.112	2.078	− 2.119	2.090
c_5	4.120	4.154	4.136	4.154	4.143	4.163
d_1	8.186	8.236	8.227	8.236	8.237	8.227
d_2	9.664	9.718	9.782	9.718	9.775	9.727
V d_3	12.291	12.388	12.334	12.388	12.356	12.389
VI e_1	24.550	24.734	24.678	24.734	24.682	24.714
e_2	26.755	26.970	26.802	26.970	26.797	26.969
e_3	28.531	28.756	28.683	28.756	28.706	28.754
e_4	30.320	30.544	30.568	30.544	30.576	30.543
e_5	32.223	32.469	32.306	32.469	32.331	32.495
VII	−36.802	−37.081	−37.010	−37.081	−37.046	−37.090

TABLE IIa.—*The Adopted Values of the Readings of the Zenith Distance Micrometer.*

	Jan. 13, 1894, to Oct. 20, 1894.			Oct. 31, 1894, to Sept. 27, 1897.			Oct. 9, 1900, to Apr. 29, 1901.			Aug. 2, 1901, to Oct. 10, 1901.		
	4′	5′	6′	4′	5′	6′	3′	4′	5′	3′	4′	5′
″	revs.	revs.	revs.	revs.	revs.	revs.	revs.	revs.	revs.	revs.	revs.	revs.
0	40.000	43.155	46.309	40.000	43.129	46.258	39.386	42.514	45.643	39.388	42.517	45.646
1	.053	.207	.362	.052	.181	.310	.438	.566	.695	.440	.569	.698
2	.105	.260	.414	.104	.233	.362	.490	.618	.747	.492	.621	.750
3	.158	.312	.467	.156	.285	.414	.542	.671	.799	.544	.673	.802
4	.210	.365	.519	.209	.337	.466	.594	.723	.851	.596	.725	.855
5	40.263	43.417	46.572	40.261	43.390	46.518	39.646	42.775	45.903	39.648	42.778	45.907
6	.315	.470	.625	.313	.442	.571	.699	.827	45.956	.701	.830	45.959
7	.368	.523	.677	.365	.494	.623	.751	.879	46.008	.753	.882	46.011
8	.421	.575	.730	.417	.546	.675	.803	.931	.060	.805	.934	.063
9	.473	.628	.782	.469	.598	.727	.855	42.983	.112	.857	42.986	.115
10	40.526	43.680	46.835	40.521	43.650	46.779	39.907	43.036	46.164	39.909	43.038	46.168
11	.578	.733	.887	.574	.702	.831	39.959	.088	.216	39.961	.091	.220
12	.631	.785	.940	.626	.755	.883	40.011	.140	.268	40.013	.143	.272
13	.683	.838	46.993	.678	.807	.936	.064	.192	.321	.066	.195	.324
14	.736	.891	47.045	.730	.859	46.998	.116	.244	.373	.118	.247	.376
15	40.789	43.943	47.098	40.782	43.911	47.040	40.168	43.296	46.425	40.170	43.299	46.428
16	.841	43.996	.150	.834	43.963	.092	.220	.348	.477	.222	.351	.480
17	.894	44.048	.203	.887	44.015	.144	.272	.401	.529	.274	.403	.533
18	.946	.101	.256	.939	.068	.196	.324	.453	.581	.326	.456	.585
19	40.999	.154	.308	40.991	.120	.249	.376	.505	.633	.379	.508	.637
20	41.052	44.206	47.361	41.043	44.172	47.301	40.428	43.557	46.686	40.431	43.560	46.689
21	.104	.259	.413	.095	.224	.353	.481	.609	.738	.483	.612	.741
22	.157	.311	.466	.147	.276	.405	.533	.661	.790	.535	.664	.793
23	.209	.364	.518	.199	.328	.457	.585	.713	.842	.587	.716	.846
24	.262	.416	.571	.252	.380	.509	.637	.766	.894	.639	.768	.898
25	41.314	44.469	47.624	41.304	44.433	47.561	40.689	43.818	46.946	40.691	43.821	46.950
26	.367	.522	.676	.356	.485	.614	.741	.870	46.998	.744	.873	47.002
27	.420	.574	.729	.408	.537	.666	.793	.922	47.051	.796	.925	.054
28	.472	.627	.781	.460	.589	.718	.846	43.974	.103	.848	43.977	.106
29	.525	.679	.834	.512	.641	.770	.898	44.026	.155	.900	44.029	.158
30	41.577	44.732	47.886	41.564	44.693	47.822	40.950	44.078	47.207	40.952	44.081	47.211
31	.630	.784	.939	.617	.745	.874	41.002	.131	.259	41.004	.134	.263
32	.682	.837	47.992	.669	.798	.926	.054	.183	.311	.057	.186	.315
33	.735	.890	48.044	.721	.850	47.979	.106	.235	.363	.109	.238	.367
34	.788	.942	.097	.773	.902	48.031	.158	.287	.416	.161	.290	.419
35	41.840	44.995	48.149	41.825	44.954	48.083	41.211	44.339	47.468	41.213	44.342	47.471
36	893	45.047	.202	.877	45.006	.135	.263	.391	.520	.265	.394	.524
37	.945	.100	.254	.929	.058	.187	.315	.443	.572	.317	.446	.576
38	41.998	.152	.307	41.982	.110	.239	.367	.496	.624	.369	.499	.628
39	42.050	.205	.360	42.034	.163	.291	.419	.548	.676	.422	.551	.680
40	42.103	45.258	48.412	42.086	45.215	48.344	41.471	44.600	47.728	41.474	44.603	47.732
41	.156	.310	.465	.138	.267	.396	.523	.652	.781	.526	.655	.784
42	.208	.363	.517	.190	.319	.448	.576	.704	.833	.578	.707	.836
43	.261	.415	.570	.242	.371	.500	.628	.756	.885	.630	.759	.889
44	.313	.468	.623	.294	.423	.552	.680	.808	.937	.682	.812	.941
45	42.366	45.521	48.675	42.347	45.475	48.604	41.732	44.861	47.989	41.735	44.864	47.993
46	.419	.573	.728	.399	.528	.656	.784	.913	48.041	.787	.916	48.045
47	.471	.626	.780	.451	.580	.709	.836	44.965	.093	.839	44.968	.097
48	.524	.678	.833	.503	.632	.761	.888	45.017	.146	.891	45.020	.149
49	.576	.731	.885	.555	.684	.813	.941	.069	.198	.943	.072	.202
50	42.629	45.783	48.938	42.607	45.736	48.865	41.993	45.121	48.250	41.995	45.124	48.254
51	.681	.836	48.991	.660	.788	.917	42.045	.173	.302	42.047	.177	.306
52	.734	.889	49.043	.712	.841	48.969	.097	.226	.354	.100	.229	.358
53	.787	.941	.096	.764	.893	49.022	.149	.278	.406	.152	.281	.410
54	.839	45.994	.148	.816	.945	.074	.201	.330	.458	.204	.333	.462
55	42.892	46.046	49.201	42.868	45.997	49.126	42.253	45.382	48.511	42.256	45.385	48.514
56	.944	.099	.253	.920	46.049	.178	.306	.434	.563	.308	.437	.567
57	42.997	.151	.306	42.972	.101	.230	.358	.486	.615	.360	.490	.619
58	43.049	.204	.359	43.025	.153	.282	.410	.538	.667	.413	.542	.671
59	.102	.257	.411	.077	.206	.334	.462	.591	.719	.465	.594	.723
60	43.155	46.309	49.464	43.129	46.258	49.387	42.514	45.643	48.771	42.517	45.646	48.775

TABLE IIb.—*The Adopted Values of the Readings of the Zenith Distance Micrometer.*

Revs.	Jan. 27, 1900, to July 30, 1900.									
	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″
30	0 0.00	0 1.92	0 3.83	0 5.75	0 7.67	0 9.58	0 11.50	0 13.41	0 15.33	0 17.25
31	19.16	21.08	22.99	24.91	26.82	28.73	30.65	32.56	34.48	36.39
32	38.31	40.22	42.13	44.05	45.96	47.87	49.78	51.70	53.61	55.52
33	57.43	59.34	1 1.25	1 3.16	1 5.07	1 6.98	1 8.89	1 10.80	1 12.71	1 14.62
34	1 16.53	1 18.44	20.35	22.26	24.17	26.08	27.99	29.89	31.80	33.71
35	35.62	37.52	39.43	41.34	43.24	45.15	47.06	48.96	50.87	52.78
36	54.68	56.59	58.49	2 0.40	2 2.30	2 4.20	2 6.11	2 8.01	2 9.92	2 11.82
37	2 13.72	2 15.62	2 17.53	19.43	21.33	23.23	25.13	27.04	28.94	30.84
38	32.74	34.64	36.54	38.44	40.34	42.24	44.14	46.04	47.94	49.84
39	51.73	53.63	55.53	57.43	59.33	3 1.23	3 3.12	3 5.02	3 6.92	3 8.82
40	3 10.72	3 12.61	3 14.51	3 16.41	3 18.31	20.20	22.10	24.00	25.90	27.80
41	29.70	31.59	33.49	35.39	37.29	39.19	41.09	42.99	44.89	46.79
42	48.70	50.60	52.50	54.40	56.31	58.21	4 0.12	4 2.02	4 3.93	4 5.83
43	4 7.74	4 9.64	4 11.55	4 13.46	4 15.37	4 17.28	19.19	21.10	23.01	24.92
44	26.84	28.75	30.66	32.58	34.49	36.41	38.33	40.24	42.16	44.08
45	46.00	47.91	49.83	51.75	53.67	55.59	57.52	59.44	5 1.36	5 3.28
46	5 5.20	5 7.13	5 9.05	5 10.98	5 12.90	5 14.82	5 16.75	5 18.68	20.60	22.53
47	24.45	26.38	28.31	30.24	32.16	34.09	36.02	37.95	39.88	41.81
48	43.74	45.67	47.60	49.53	51.47	53.40	55.33	57.26	59.19	6 1.13
49	6 3.06	6 4.99	6 6.93	6 8.86	6 10.79	6 12.73	6 14.66	6 16.60	6 18.53	20.47
50	22.40	24.34	26.27	28.20	30.14	32.07	34.01	35.94	37.87	39.81
51	41.74	43.67	45.60	47.54	49.47	51.40	53.33	55.26	57.20	59.13
52	7 1.06	7 2.99	7 4.92	7 6.85	7 8.78	7 10.71	7 12.64	7 14.57	7 16.50	7 18.42
53	20.35	22.28	24.21	26.14	28.07	29.99	31.92	33.85	35.77	37.70
54	39.63	41.55	43.48	45.40	47.33	49.26	51.18	53.10	55.03	56.95
55	58.88	8 0.80	8 2.73	8 4.65	8 6.57	8 8.50	8 10.42	8 12.34	8 14.26	8 16.18
56	8 18.11	20.03	21.95	23.87	25.79	27.71	29.63	31.55	33.47	35.39
57	37.31	39.23	41.15	43.07	44.99	46.90	48.82	50.74	52.66	54.58
58	56.50	58.42	9 0.33	9 2.25	9 4.17	9 6.09	9 8.00	9 9.92	9 11.83	9 13.75
59	9 15.66	9 17.58	19.49	21.41	23.32	25.24	27.15	29.06	30.98	32.89

TABLE III.—*Inclination and Distance of Zenith Distance Threads.*

Vertical Thread.	Correction for Double Threads.	Correction for Thread A.	Correction for Thread B.	Correction for Thread C.	Vertical Thread.	Correction for Double Threads.	Correction for Thread A.	Correction for Thread B.	Correction for Thread C.
January 13, 1894, to October 20, 1894.					June 6, 1895, to January 4, 1896.				
	″	′ ″	′ ″	′ ″		″	′ ″	′ ″	′ ″
I	−2.44	+3 10.63	−3 14.54	. .	I	+2.01	+3 17.41	−3 10.92	−6 24.04
II	1.63	11.38	13.77	. .	II	1.34	16.66	11.69	24.62
III	−0.81	12.14	12.98	. .	III	+0.67	15.90	12.46	25.21
IV	0.00	12.89	12.21	. .	IV	0.00	15.15	13.23	25.79
V	+0.82	13.65	11.42	. .	V	−0.67	14.40	14.00	26.37
VI	1.63	14.40	10.64	. .	VI	1.34	13.64	14.77	26.96
VII	+2.45	+3 15.16	−3 9.86	. .	VII	−2.01	+3 12.89	−3 15.53	−6 27.54
October 31, 1894, to January 31, 1895.					June 29, 1896, to September 27, 1897.				
	″	′ ″	′ ″	′ ″		″	′ ″	′ ″	′ ″
I	−2.64	+3 11.73	−3 16.30	. .	I	−1.69	+3 13.39	−3 15.31	−6 27.05
II	1.76	12.58	15.42	. .	II	1.13	13.99	14.65	26.61
III	−0.88	13.43	14.54	. .	III	−0.56	14.59	13.99	26.16
IV	0.00	14.28	13.67	. .	IV	0.00	15.18	13.33	25.72
V	+0.88	15.13	12.79	. .	V	+0.56	15.78	12.67	25.28
VI	1.76	15.98	11.91	. .	VI	1.13	16.38	12.01	24.84
VII	+2.64	+3 16.84	−3 11.04	. .	VII	+1.69	+3 16.98	−3 11.35	−6 24.40
February 26, 1895, to May 9, 1895.					January 27, 1900, to July 30, 1900.				
	″	′ ″	′ ″	′ ″		″	′ ″	′ ″	′ ″
I	+0.54	+3 14.85	−3 13.21	−6 26.43	I	+1.93	+3 17.00	−3 11.26	−6 24.46
II	0.36	14.79	13.33	26.35	II	1.29	16.28	11.97	24.88
III	+0.18	14.72	13.46	26.26	III	+0.64	15.54	12.69	25.34
IV	0.00	14.66	13.58	26.18	IV	0.00	14.82	13.40	25.76
V	−0.18	14.59	13.70	26.09	V	−0.64	14.10	14.10	26.18
VI	0.36	14.52	13.83	26.00	VI	1.29	13.36	14.82	26.64
VII	−0.54	+3 14.46	−3 13.95	−6 25.92	VII	−1.93	+3 12.64	−3 15.53	−6 27.06
May 18, 1895, to June 1, 1895.					October 9, 1900, to November 12, 1900.				
	″	′ ″	′ ″	′ ″		″	′ ″	′ ″	′ ″
I	−0.12	+3 14.21	−3 13.89	−6 27.05	I	+1.97	+3 16.90	−3 10.87	−6 24.32
II	0.08	14.20	13.91	26.87	II	1.31	16.19	11.61	24.86
III	−0.04	14.19	13.93	26.69	III	+0.66	15.48	12.35	25.40
IV	0.00	14.18	13.94	26.51	IV	0.00	14.76	13.10	25.94
V	+0.04	14.18	13.96	26.33	V	−0.66	14.04	13.84	26.48
VI	0.08	14.17	13.98	26.15	VI	1.31	13.33	14.58	27.01
VII	+0.12	+3 14.16	−3 14.00	−6 25.97	VII	−1.97	+3 12.61	−3 15.32	−6 27.55

TABLE III.—*Inclination and Distance of Zenith Distance Threads*—Continued.

Vertical Thread.	Correction for Double Threads.	Correction for Thread A.	Correction for Thread B.	Correction for Thread C.	Vertical Thread.	Correction for Double Threads.	Correction for Thread A.	Correction for Thread B.	Correction for Thread C.
November 21, 1900, to December 15, 1900.					December 20, 1900, to October 10, 1901.				
	″	′ ″	′ ″	′ ″		″	′ ″	′ ″	′ ″
I	−2.09	+3 12.49	−3 15.44	−6 27.67	I	−2.26	+3 12.38	−3 15.67	−6 27.78
II	1.39	13.25	14.65	27.09	II	1.50	13.18	14.87	27.16
III	−0.70	14.00	13.88	26.52	III	−0.75	13.97	14.07	26.55
IV	0.00	14.76	13.10	25.94	IV	0.00	14.76	13.27	25.94
V	+0.70	15.51	12.32	25.36	V	+0.75	15.55	12.47	25.33
VI	1.39	16.26	11.54	24.78	VI	1.50	16.35	11.67	24.72
VII	+2.09	+3 17.02	−3 10.75	−6 24.20	VII	+2.26	+3 17.15	−3 10.86	−6 24.10

TABLE IV.—*Reduction to Meridian.*

Jan. 13, 1894, to Jan. 31, 1895, and June 29, 1896, to Sept. 27, 1897, constant added = + 1″.80.				Feb. 26, 1895, to Jan. 4, 1896.				Jan. 27, 1900, to Nov. 12, 1900, constant added = + 5″.00.				Nov. 21, 1900, to Oct. 10, 1901, constant added = + 5″.00.			
Z. D. S.	I	II	III	Z. D. N.	I	II	III	Z. D. N.	I	II	III	Z. D. S.	I	II	III
	VII	VI	V		VII	VI	V		VII	VI	V		VII	VI	V
°	″	″	″	°	″	″	″	°	″	″	″	°	″	″	″
43	1.75	1.78	1.79	317	0.05	0.02	0.01	317	5.05	5.02	5.01	43	4.95	4.98	4.99
44	1.73	1.77	1.79	316	0.07	0.03	0.01	316	5.07	5.03	5.01	44	4.93	4.97	4.99
45	1.72	1.76	1.79	315	0.08	0.04	0.01	315	5.08	5.03	5.01	45	4.92	4.97	4.99
46	1.71	1.76	1.79	314	0.09	0.04	0.01	314	5.09	5.04	5.01	46	4.91	4.96	4.99
47	1.69	1.75	1.79	313	0.11	0.05	0.01	313	5.10	5.05	5.01	47	4.90	4.95	4.99
48	1.68	1.75	1.79	312	0.12	0.05	0.01	312	5.12	5.05	5.01	48	4.88	4.95	4.99
49	1.67	1.74	1.79	311	0.13	0.06	0.01	311	5.13	5.06	5.01	49	4.87	4.94	4.99
50	1.65	1.73	1.78	310	0.15	0.07	0.02	310	5.14	5.06	5.02	50	4.86	4.94	4.98
51	1.64	1.73	1.78	309	0.16	0.07	0.02	309	5.16	5.07	5.02	51	4.84	4.93	4.98
52	1.62	1.72	1.78	308	0.17	0.08	0.02	308	5.17	5.08	5.02	52	4.83	4.92	4.98
53	1.61	1.72	1.78	307	0.19	0.08	0.02	307	5.19	5.08	5.02	53	4.81	4.92	4.98
54	1.60	1.71	1.78	306	0.20	0.09	0.02	306	5.20	5.09	5.02	54	4.80	4.91	4.98
55	1.58	1.70	1.78	305	0.22	0.10	0.02	305	5.21	5.09	5.02	55	4.79	4.91	4.98
56	1.57	1.70	1.77	304	0.23	0.10	0.03	304	5.23	5.10	5.03	56	4.77	4.90	4.97
57	1.55	1.69	1.77	303	0.24	0.11	0.03	303	5.24	5.11	5.03	57	4.76	4.89	4.97
58	1.54	1.68	1.77	302	0.26	0.12	0.03	302	5.25	5.11	5.03	58	4.75	4.89	4.97
59	1.53	1.68	1.77	301	0.27	0.12	0.03	301	5.27	5.12	5.03	59	4.73	4.88	4.97
60	1.51	1.67	1.77	300	0.29	0.13	0.03	300	5.28	5.13	5.03	60	4.72	4.87	4.97
61	1.50	1.66	1.77	299	0.30	0.14	0.03	299	5.30	5.13	5.03	61	4.70	4.87	4.97
62	1.48	1.66	1.76	298	0.32	0.14	0.04	298	5.32	5.14	5.03	62	4.68	4.86	4.97
63	1.46	1.65	1.76	297	0.33	0.15	0.04	297	5.33	5.15	5.04	63	4.67	4.85	4.96
64	1.45	1.64	1.76	296	0.35	0.16	0.04	296	5.35	5.16	5.04	64	4.65	4.84	4.96
65	1.43	1.64	1.76	295	0.37	0.16	0.04	295	5.36	5.16	5.04	65	4.64	4.84	4.96
66	1.42	1.63	1.76	294	0.38	0.17	0.04	294	5.38	5.17	5.04	66	4.62	4.83	4.96

TABLE V.

Precession in Declination from 1894.0 to 1900.0.

ARGUMENT = R. A. 1894.0.

m	0^h	1^h	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	m
	″	″	″	″	″	″	″	″	″	″	″	″	
0	+120.31	+116.19	+104.16	+85.02	+60.09	+31.07	−0.07	−31.21	−60.22	−85.13	−104.23	−116.23	0
1	.31	116.05	103.90	84.65	59.63	30.56	0.60	31.72	60.67	.50	.49	.36	1
2	.31	115.91	.63	84.27	59.17	30.05	1.12	32.22	61.13	85.87	104.75	.49	2
3	.30	.77	.36	83.89	58.71	29.54	1.65	32.73	61.58	86.24	105.01	.62	3
4	.29	.63	103.09	.51	58.25	29.03	2.17	33.23	62.03	.61	.26	.75	4
5	120.27	.48	102.82	83.13	57.79	28.52	2.70	33.74	.48	86.97	.51	116.88	5
6	.26	.33	.54	82.75	57.33	28.01	3.22	34.24	62.93	87.33	105.76	117.00	6
7	.25	.18	102.27	82.37	56.87	27.50	3.75	34.74	63.38	87.69	106.01	.12	7
8	.23	115.03	101.99	81.99	56.41	26.99	4.27	35.25	63.82	88.05	.26	.24	8
9	.21	114.88	.71	.61	55.95	26.48	4.80	35.75	64.27	.41	.51	.36	9
10	120.19	.72	.43	81.22	.49	25.97	5.32	36.25	64.71	88.76	.75	117.47	10
11	.16	.56	101.15	80.83	55.02	25.46	5.84	36.75	65.15	89.11	106.99	.58	11
12	.14	.40	100.87	.45	54.55	24.94	6.37	37.25	65.59	.47	107.23	.69	12
13	.11	.24	.58	80.06	54.08	24.43	6.89	37.75	66.03	89.82	.47	.80	13
14	.07	114.07	.29	79.67	53.61	23.91	7.41	38.25	.47	90.17	.70	117.90	14
15	.04	113.90	100.00	79.28	53.14	23.40	7.93	38.74	66.91	.51	107.94	118.01	15
16	120.00	.73	99.71	78.88	52.67	22.88	8.46	39.24	67.35	90.86	108.17	.11	16
17	119.97	.56	.42	.48	52.20	22.37	8.98	39.74	67.78	91.20	.40	.21	17
18	.93	.39	99.12	78.08	51.73	21.85	9.50	40.23	68.21	.54	.62	.30	18
19	.88	.21	98.82	77.68	51.26	21.34	10.03	40.73	68.64	91.88	108.85	.40	19
20	119.84	113.03	.52	77.28	50.78	20.82	10.55	41.22	69.07	92.22	109.07	118.49	20
21	.79	112.85	98.22	76.88	50.30	20.30	11.07	41.71	.50	.56	.29	.58	21
22	.74	.67	97.92	.47	49.82	19.78	11.59	42.20	69.93	92.89	.51	.67	22
23	.69	.48	.61	76.07	49.34	19.27	12.12	42.69	70.35	93.22	.73	.76	23
24	.64	.29	97.30	75.66	48.86	18.75	12.64	43.18	70.78	.55	109.94	.84	24
25	119.58	112.10	96.99	75.25	48.38	18.23	13.16	43.67	71.20	93.88	110.15	118.92	25
26	.52	111.91	.68	74.84	47.90	17.71	13.68	44.16	71.62	94.21	.36	119.00	26
27	.46	.72	.37	.43	47.42	17.19	14.20	44.65	72.05	.54	.57	.08	27
28	.40	.53	96.05	74.01	46.94	16.67	14.73	45.14	.47	94.86	.78	.15	28
29	.34	.33	95.73	73.60	46.46	16.15	15.25	45.63	72.88	95.18	110.98	.22	29
30	119.27	111.13	.41	73.18	45.98	15.63	15.77	46.11	73.30	.50	111.18	119.29	30
31	.20	110.93	95.09	72.76	.50	15.11	16.29	46.59	73.72	95.82	.38	.36	31
32	.13	.72	94.77	72.34	45.01	14.59	16.81	47.07	74.13	96.14	.58	.42	32
33	119.06	.51	.44	71.92	44.52	14.06	17.33	47.55	.54	.45	.77	.48	33
34	118.98	.30	94.11	.50	44.03	13.54	17.85	48.03	74.95	96.76	111.96	.54	34
35	.90	110.09	93.78	71.08	43.54	13.02	18.37	.51	75.36	97.07	112.15	.60	35
36	.82	109.88	.45	70.65	43.05	12.50	18.89	48.99	75.77	.38	.34	.66	36
37	.74	.67	93.12	70.23	42.56	11.98	19.41	49.47	76.18	97.69	.53	.71	37
38	.65	.45	92.79	69.80	42.07	11.45	19.92	49.95	.58	98.00	.72	.76	38
39	.56	.23	.46	69.37	41.58	10.93	20.44	50.43	76.99	.30	112.90	.81	39
40	118.47	109.01	92.12	68.94	41.09	10.41	20.96	50.91	77.39	.60	113.08	119.86	40
41	.38	108.79	91.78	.51	40.60	9.89	21.48	51.39	77.79	98.90	.26	.91	41
42	.28	.56	.44	68.08	40.10	9.36	21.99	51.86	78.19	99.20	.43	.95	42
43	.18	.34	91.10	67.65	39.60	8.84	22.51	52.33	.59	.50	.61	119.99	43
44	118.08	108.11	90.76	67.22	39.10	8.32	23.02	52.80	78.99	99.79	.78	120.03	44
45	117.98	107.88	.41	66.78	38.61	7.79	23.54	53.27	79.39	100.08	113.95	.06	45
46	.88	.64	90.06	66.34	38.11	7.27	24.05	53.74	79.78	.37	114.11	.09	46
47	.77	.41	89.71	65.90	37.61	6.75	24.57	54.21	80.17	.66	.28	.12	47
48	.66	107.17	.36	.46	37.11	6.23	25.08	54.68	.56	100.95	.44	.15	48
49	.55	106.93	89.00	65.02	36.61	5.70	25.60	55.15	80.95	101.23	.60	.18	49
50	117.44	.69	88.65	64.58	36.11	5.18	26.11	55.62	81.34	.51	.76	120.20	50
51	.33	.45	88.30	64.14	35.61	4.66	26.62	56.08	81.73	101.79	114.92	.22	51
52	.21	106.20	87.94	63.69	35.11	4.13	27.13	56.54	82.11	102.07	115.07	.24	52
53	117.09	105.95	.58	63.25	34.60	3.61	27.64	57.00	.49	.35	.22	.26	53
54	116.97	.70	87.22	62.80	34.10	3.08	28.15	.46	82.87	.62	.37	.27	54
55	.85	.45	86.86	62.35	33.60	2.56	28.66	57.92	83.25	102.89	.52	120.28	55
56	.72	105.20	.50	61.90	33.09	2.03	29.17	58.38	83.63	103.16	.67	.29	56
57	.59	104.94	86.13	.45	32.59	1.51	29.68	58.84	84.01	.43	.81	.30	57
58	.46	.68	85.76	61.00	32.08	0.98	30.19	59.30	.39	.70	115.95	.31	58
59	.33	.42	.39	60.54	31.58	+ 0.46	30.70	59.76	84.76	103.97	116.09	.31	59
60	+116.19	+104.16	+85.02	+60.09	+31.07	− 0.07	−31.21	−60.22	−85.13	−104.23	−116.23	−120.31	60

TABLE V—Continued.

Precession in Declination from 1894.0 to 1900.0—Continued.

ARGUMENT=R. A. 1894.0.

m	12h	13h	14h	15h	16h	17h	18h	19h	20h	21h	22h	23h	m
	″	″	″	″	″	″	″	″	″	″	″	″	
0	−120.31	−116.19	−104.15	−85.01	−60.08	−31.05	+ 0.09	+31.23	+60.23	+ 85.14	+104.24	+116.24	0
1	.31	116.05	103.89	84.64	59.62	30.54	0.62	31.74	60.68	85.51	.50	.37	1
2	.31	115.91	.62	84.26	59.16	30.03	1.14	32.24	61.14	85.88	104.76	.50	2
3	.30	.77	.35	83.88	58.70	29.52	1.67	32.75	61.59	86.24	105.02	.63	3
4	.29	.63	103.08	.50	58.24	29.01	2.19	33.25	62.04	.60	.27	.76	4
5	120.27	.48	102.81	83.12	57.78	28.50	2.72	33.76	.49	86.97	.52	116.89	5
6	.26	.33	.53	82.74	57.32	27.99	3.24	34.26	62.94	87.33	105.77	117.01	6
7	.25	.18	102.26	82.36	56.86	27.48	3.77	34.76	63.39	87.69	106.02	.13	7
8	.23	115.03	101.98	81.98	56.40	26.97	4.29	35.27	63.83	88.05	.27	.25	8
9	.21	114.88	.70	.60	55.94	26.46	4.82	35.77	64.28	.41	.52	.37	9
10	120.19	.72	.42	81.21	.48	25.95	5.34	36.27	64.72	88.76	106.76	.48	10
11	.16	.56	101.14	80.82	55.01	25.44	5.86	36.77	65.16	89.11	107.00	.59	11
12	.14	.40	100.86	.44	54.54	24.92	6.39	37.27	65.60	.47	.24	.70	12
13	.11	.24	.57	80.05	54.07	24.41	6.91	37.77	66.04	89.82	.48	.81	13
14	.07	114.07	100.28	79.66	53.60	23.89	7.43	38.26	.48	90.17	.71	117.91	14
15	.04	113.90	99.99	79.27	53.13	23.38	7.95	38.76	66.92	.51	107.95	118.02	15
16	120.00	.73	.70	78.87	52.66	22.86	8.48	39.25	67.36	90.86	108.18	.12	16
17	119.97	.56	.41	.47	52.19	22.35	9.00	39.75	67.79	91.20	.41	.22	17
18	.93	.39	99.11	78.07	51.72	21.83	9.52	40.24	68.22	.54	.63	.31	18
19	.88	.21	98.81	77.67	51.25	21.32	10.05	40.74	68.65	91.88	108.86	.41	19
20	.84	113.03	.51	77.27	50.77	20.80	10.57	41.23	69.08	92.22	109.08	118.50	20
21	.79	112.85	98.21	76.87	50.29	20.28	11.09	41.72	.51	.56	.30	.59	21
22	.74	.67	97.91	.46	49.81	19.76	11.61	42.21	69.94	92.89	.52	.68	22
23	.69	.48	.60	76.06	49.33	19.25	12.14	42.70	70.36	93.22	.74	.77	23
24	.64	.29	97.29	75.65	48.85	18.73	12.66	43.19	70.79	.55	109.95	.85	24
25	119.58	112.10	96.98	75.24	48.37	18.21	13.18	43.68	71.21	93.88	110.16	118.93	25
26	.52	111.91	.67	74.83	47.89	17.69	13.70	44.17	71.63	94.21	.37	119.01	26
27	.46	.72	.36	.42	47.41	17.17	14.22	44.66	72.06	.54	.58	.09	27
28	.40	.52	96.04	74.00	46.93	16.65	14.75	45.15	.48	94.86	.79	.16	28
29	.34	.32	95.72	73.59	46.44	16.13	15.27	45.64	72.89	95.18	110.99	.23	29
30	.27	111.12	.40	73.17	45.96	15.61	15.79	46.12	73.31	.50	111.19	119.30	30
31	.20	110.92	95.08	72.75	45.48	15.09	16.31	46.60	73.73	95.82	.39	.37	31
32	.13	.71	94.76	72.33	44.99	14.57	16.83	47.08	74.14	96.14	.59	.43	32
33	119.06	.50	.43	71.91	.50	14.04	17.35	47.56	.55	.45	.78	.49	33
34	118.98	.29	94.10	.49	44.01	13.52	17.87	48.04	74.96	96.76	111.97	.55	34
35	.90	110.08	93.77	71.07	43.52	13.00	18.39	48.52	75.37	97.07	112.16	119.61	35
36	.82	109.87	.44	70.64	43.03	12.48	18.91	49.00	75.78	.38	.35	.66	36
37	.74	.66	93.11	70.22	42.54	11.96	19.43	.48	76.19	97.69	.54	.71	37
38	.65	.44	92.78	69.79	42.05	11.43	19.94	49.96	76.59	98.00	.73	.76	38
39	.56	.22	.45	69.36	41.56	10.91	20.46	50.44	77.00	.30	112.91	.81	39
40	118.47	109.00	92.11	68.93	41.07	10.39	20 98	50.92	.40	.60	113.09	.86	40
41	.38	108.78	91.77	.50	40.58	9.87	21.50	51.40	77.80	98.90	.27	.91	41
42	.28	.55	.43	68.07	40.08	9.34	22.01	51.87	78.20	99.20	.44	.95	42
43	.18	.33	91.09	67.64	39.58	8.82	22.53	52.34	78.60	.50	.62	119.99	43
44	118.08	108.10	90.75	67.21	39.08	8.30	23.04	52.81	79.00	99.79	.79	120.03	44
45	117.98	107.87	.40	66.77	38.59	7.77	23.56	53.28	.40	100.08	113.96	.06	45
46	.88	.63	90.05	66.33	38.09	7.25	24.07	53.75	79.79	.37	114.12	.09	46
47	.77	.40	89.70	65.89	37.59	6.73	24.59	54.22	80.18	.66	.29	.12	47
48	.66	107.16	89.35	.45	37.09	6.21	25.10	54.69	.57	100.94	.45	.15	48
49	.55	106.92	88.99	65.01	36.59	5.68	25.62	55.16	80.96	101.23	.61	.18	49
50	117.44	.68	.64	64.57	36.09	5.16	26.13	55.63	81.35	.51	.77	120.20	50
51	.33	.44	88.29	64.13	35.59	4.64	26.64	56.09	81.74	101.79	114.93	.22	51
52	.21	106.19	87.93	63.68	35.09	4.11	27.15	56.55	82.12	102.07	115.08	.24	52
53	117.09	105.94	.57	63.24	34.58	3.59	27.66	57.01	.50	.35	.23	.26	53
54	116.97	.69	87.21	62.79	34.08	3.06	28.17	.47	82.88	.62	.38	.27	54
55	.85	.44	86.85	62.34	33.58	2.54	28.68	57.93	83.26	102.89	.53	120.28	55
56	.72	105.19	.49	61.89	33.07	2.01	29.19	58.39	83.64	103.16	.68	.29	56
57	.59	104.93	86.12	61.44	32.57	1.49	29.70	58.85	84.02	.43	.82	.30	57
58	.46	.67	85.75	60.99	32.06	0.96	30.21	59.31	.40	.70	115.96	.31	58
59	.33	.41	.38	.53	31.56	− 0.44	30.72	59.77	84.77	103.97	116.10	.31	59
60	−116.19	−104.15	− 85.01	−60.08	−31.05	+ 0.09	+31.23	+60.23	+85.14	+104.24	+116.24	+120.31	60

TABLE VI.

Precession in Declination from 1895.0 to 1900.0.

ARGUMENT = R. A. 1895.0.

m	0^h	1^h	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	m
	″	″	″	″	″	″	″	″	″	″	″	″	
0	+100.26	+96.83	+86.80	+70.86	+50.09	+25.90	− 0.05	−26.00	−50.17	−70.93	−86.86	− 96.86	0
1	.26	.71	.58	.55	49.71	.48	.49	.42	.55	71.24	87.08	96.97	1
2	.26	.59	.36	70.24	49.33	25.06	0.92	26.84	50.93	.55	.29	97.08	2
3	.25	.47	86.14	69.93	48.95	24.64	1.36	27.26	51.30	71.85	.51	.19	3
4	.24	.35	85.91	.62	.57	24.22	1.80	27.68	51.68	72.15	.72	.30	4
5	100.23	.23	.68	69.30	48.19	23.80	2.24	28.10	52.05	.45	87.93	97.40	5
6	.22	96.11	.45	68.98	47.81	23.37	2.67	.52	.42	72.75	88.14	.50	6
7	.21	95.99	85.22	.66	.42	22.94	3.11	28.94	52.80	73.05	.35	.60	7
8	.20	.86	84.99	.34	47.03	.51	.55	29.36	53.17	.35	.55	.70	8
9	.18	.73	.76	68.02	46.64	22.08	3.98	29.78	.54	.65	.76	.80	9
10	100.16	.60	.53	67.70	46.25	21.65	4.42	30.20	53.91	73.95	88.96	.89	10
11	.14	.47	.29	.38	45.86	21.22	4.86	30.62	54.28	74.24	89.16	97.98	11
12	.12	.34	84.05	67.05	.47	20.79	5.29	31.03	54.65	.53	.36	98.07	12
13	.10	.20	83.81	66.72	45.08	20.37	5.73	.45	55.01	74.82	.56	.16	13
14	.07	95.06	.57	.39	44.69	19.94	6.17	31.86	.38	75.11	.76	.25	14
15	.04	94.92	.33	66.06	44.30	.51	6.61	32.28	55.74	.40	89.95	98.34	15
16	100.01	.78	83.09	65.73	43.91	19.08	7.04	32.69	56.11	.69	90.14	.43	16
17	99.98	.64	82.85	.40	.52	18.65	.48	33.11	.47	75.98	.33	.51	17
18	.95	.50	.60	65.07	43.13	18.22	7.92	.52	56.83	76.27	.52	.59	18
19	.92	.35	.35	64.74	42.73	17.79	8.35	33.93	57.19	.55	.71	.67	19
20	.88	.20	82.10	.41	42.33	17.36	8.79	34.34	.55	76.83	90.89	98.75	20
21	.84	94.05	81.85	64.07	41.93	16.93	9.22	34.75	57.91	77.11	91.07	.83	21
22	.80	93.90	.60	63.73	.53	.50	9.66	35.16	58.27	.39	.25	.90	22
23	.76	.74	.34	.39	41.13	16.07	10.09	.57	.63	.67	.43	98.97	23
24	.71	.58	81.08	63.05	40.73	15.64	.53	35.97	58.98	77.95	.61	99.04	24
25	99.66	.42	80.82	62.71	40.33	15.21	10.96	36.38	59.33	78.22	.79	.11	25
26	.61	.26	.56	.37	39.93	14.78	11.40	36.79	59.68	.49	91.97	.17	26
27	.56	93.10	.30	62.03	.53	14.35	11.83	37.20	60.03	78.76	92.14	.23	27
28	.51	92.94	80.04	61.69	39.13	13.92	12.27	37.60	.38	79.03	.31	.29	28
29	.46	.78	79.78	.35	38.73	.48	12.70	38.01	60.73	.30	.48	.35	29
30	99.40	.61	.51	61.00	38.32	13.04	13.14	.41	61.08	.57	.65	99.41	30
31	.34	.44	79.24	60.65	37.91	12.61	13.57	38.81	.43	79.84	.82	.47	31
32	.28	.27	78.97	60.30	.51	12.17	14.01	39.21	61.77	80.10	92.98	.52	32
33	.22	92.10	.70	59.95	37.10	11.74	.44	39.61	62.11	.36	93.14	.57	33
34	.16	91.92	.43	.60	36.69	11.30	14.87	40.01	.45	.62	.30	.62	34
35	.09	.74	78.16	59.25	36.29	10.87	15.30	.41	62.79	80.88	.46	99.67	35
36	99.02	.56	77.89	58.90	35.88	.43	15.74	40.81	63.13	81.14	.62	.72	36
37	98.95	.38	.61	.55	.47	10.00	16.17	41.21	.47	.40	.78	.76	37
38	.88	.20	.33	58.19	35.06	9.56	16.60	41.61	63.81	.66	93.93	.80	38
39	.81	91.02	77.05	57.83	34.65	9.13	17.03	42.01	64.15	81.91	94.08	.84	39
40	.73	90.84	76.77	.47	34.24	8.69	.46	.41	.49	82.16	.23	99.88	40
41	.65	.65	.49	57.11	33.83	8.26	17.89	42.81	64.82	.41	.38	.92	41
42	.57	.46	76.21	56.75	.42	7.83	18.31	43.20	65.15	.66	.53	.95	42
43	.49	.27	75.92	.39	33.01	7.40	18.74	.59	.48	82.91	.67	99.98	43
44	.41	90.08	.63	56.03	32.60	6.96	19.17	43.99	65.81	83.15	.81	100.01	44
45	98.32	89.89	.34	55.67	32.19	.52	19.60	44.38	66.14	.39	94.95	.04	45
46	.23	.70	75.05	55.31	31.78	6.08	20.03	44.77	.47	.63	95.09	.07	46
47	.14	.51	74.76	54.94	31.36	5.64	.46	45.16	66.80	83.87	.23	.10	47
48	98.05	.31	.47	.57	30.94	5.20	20.89	.55	67.13	84.11	.37	.13	48
49	97.96	89.11	74.18	54.20	.52	4.76	21.32	45.94	.45	.35	.51	.15	49
50	.87	88.91	73.88	53.83	30.10	4.32	21.75	46.33	67.77	.59	.64	100.17	50
51	.77	.71	.58	.46	29.68	3.88	22.18	46.72	68.09	84.82	.77	.19	51
52	.67	.50	73.28	53.09	29.26	.45	22.60	47.11	.41	85.05	95.90	.21	52
53	.57	.29	72.98	52.72	28.84	3.01	23.03	.49	68.73	.28	96.03	.22	53
54	.47	88.08	.68	52.35	.42	2.57	.46	47.88	69.05	.51	.15	.23	54
55	97.37	87.87	.38	51.98	28.00	2.14	23.88	48.26	.37	.74	.27	100.24	55
56	.27	.66	72.08	.61	27.58	1.70	24.31	48.64	69.69	85.97	.39	.25	56
57	.16	.45	71.78	51.23	27.16	1.26	24.73	49.03	70.00	86.20	.51	.26	57
58	97.05	.24	.48	50.85	26.74	0.82	25.15	.41	.31	.42	.63	.26	58
59	96.94	87.02	71.17	.47	26.32	+ 0.39	25.58	49.79	.62	.64	.75	.26	59
60	+ 96.83	+86.80	+70.86	+50.09	+25.90	− 0.05	−26.00	−50.17	−70.93	−86.86	−96.86	−100.26	60

TABLE VI—Continued.

Precession in Declination from 1895.0 to 1900.0—Continued.

ARGUMENT=R. A. 1895.0.

m	12^h	13^h	14^h	15^h	16^h	17^h	18^h	19^h	20^h	21^h	22^h	23^h	m
	″	″	″	″	″	″	″	″	″	″	″	″	
0	−100.26	−96.83	−86.80	−70.85	−50.08	−25.89	+ 0.06	+26.01	+50.18	+70.94	+86.86	+ 96.86	0
1	.26	.71	.58	.54	49.70	.47	.50	.43	.56	71.25	87.08	96.97	1
2	.26	.59	.36	70.23	49.32	25.05	0.93	26.85	50.94	.56	.29	97.08	[illegible]
3	.25	.47	86.14	69.92	48.94	24.63	1.37	27.27	51.31	71.86	.51	.19	3
4	.24	.35	85.91	.61	.56	24.21	1.81	27.69	51.69	72.16	.72	.30	4
5	100.23	.23	.68	69.29	48.18	23.79	2.25	28.11	52.06	.46	87.93	97.40	5
6	.22	96.11	.45	68.97	47.80	23.36	2.68	.53	.43	72.76	88.14	.50	6
7	.21	95.99	85.22	.65	.41	22.93	3.12	28.95	52.81	73.06	.35	.60	7
8	.20	.86	84.99	.33	47.02	.50	.56	29.37	53.18	.36	.55	.70	8
9	.18	.73	.76	68.01	46.63	22.07	3.99	29.79	.55	.66	.76	.80	9
10	100.16	.60	.53	67.69	46.24	21.64	4.43	30.21	53.92	73.96	88.96	.89	10
11	.14	.47	.29	.37	45.85	21.21	4.87	30.63	54.29	74.25	89.16	97.98	11
12	.12	.34	84.05	67.04	.46	20.78	5.30	31.04	54.66	.54	.36	98.07	12
13	.10	.20	83.81	66.71	45.07	20.35	5.74	.46	55.02	74.83	.56	.16	13
14	.07	95.06	.57	.38	44.68	19.92	6.18	31.87	.39	75.12	.76	.25	14
15	.04	94.92	.33	66.05	44.29	.49	6.62	32.29	55.75	.41	89.95	.34	15
16	100.01	.78	83.09	65.72	43.90	19.06	7.05	32.70	56.12	.70	90.14	.43	16
17	99.98	.64	82.85	.39	.51	18.63	.49	33.12	.48	75.99	.33	98.51	17
18	.95	.50	.60	65.06	43.12	18.20	7.93	.53	56.84	76.28	.52	.59	18
19	.92	.35	.35	64.73	42.72	17.77	8.36	33.94	57.20	.56	.71	.67	19
20	.88	.20	82.10	.40	42.32	17.34	8.80	34.35	.56	76.84	90.89	.75	20
21	.84	94.05	81.85	64.06	41.92	16.91	9.23	34.76	57.92	77.12	91.07	.83	21
22	.80	93.90	.60	63.72	.52	.48	9.67	35.17	58.27	.40	.25	.90	22
23	.76	.74	.34	.38	41.12	16.05	10.10	.58	.63	.68	.43	98.97	23
24	.71	.58	81.08	63.04	40.72	15.62	.54	35.99	58.98	77.96	.61	99.04	24
25	99.66	.42	80.82	62.70	40.32	15.19	10.97	36.40	59.33	78.23	.79	.11	25
26	.61	.26	.56	.36	39.92	14.76	11.41	36.80	59.68	.50	91.97	.17	26
27	.56	93.10	.30	62.02	.52	14.33	11.84	37.21	60.04	78.77	92.14	.23	27
28	.51	92.94	80.04	61.68	39.12	13.90	12.28	37.62	.39	79.04	.31	.29	28
29	.46	.78	79.78	61.34	38.72	.46	12.71	38.02	60.73	.31	.48	.35	29
30	99.40	.61	.51	60.99	38.31	13.02	13.15	.43	61.08	.58	.65	99.41	30
31	.34	.44	79.24	.64	37.90	12.59	13.58	38.83	.43	79.84	.82	.47	31
32	.28	.27	78.97	60.29	.50	12.15	14.02	39.23	61.77	80.11	92.98	.52	32
33	.22	92.10	.70	59.94	37.09	11.72	.45	39.63	62.11	.37	93.14	.57	33
34	.16	91.92	.43	.59	36.68	11.28	14.88	40.03	.45	.63	.30	.62	34
35	.09	.74	78.16	59.24	36.28	10.85	15.31	.43	62.79	80.89	.46	.67	35
36	99.02	.56	77.89	58.89	35.87	10.41	15.75	40.83	63.13	81.14	.62	.72	36
37	98.95	.38	.61	.54	.46	9.98	16.18	41.23	.47	.40	.78	99.76	37
38	.88	.20	.33	58.18	35.05	.54	16.61	41.63	63.81	.66	93.93	.80	38
39	.81	91.02	77.05	57.82	34.64	9.11	17.04	42.03	64.15	81.91	94.08	.84	39
40	98.73	90.84	76.77	.46	34.23	8.67	.47	.43	.49	82.16	.23	.88	40
41	.65	.65	.49	57.10	33.82	8.23	17.90	42.83	64.82	.41	.38	.92	41
42	.57	.46	76.21	56.74	.41	7.80	18.32	43.22	65.16	.66	.53	.95	42
43	.49	.27	75.92	.38	33.00	7.36	18.75	43.61	.49	82.91	.67	99.98	43
44	.41	90.08	.63	56.02	32.59	6.93	19.18	44.01	65.82	83.15	.81	100.01	44
45	98.32	89.89	.34	55.66	32.18	.49	19.61	.40	66.15	.39	94.95	.04	45
46	.23	.70	75.05	55.30	31.77	6.05	20.04	44.79	.48	.63	95.09	.07	46
47	.14	.51	74.76	54.93	31.35	5.62	.47	45.18	66.81	83.87	.23	.10	47
48	98.05	.31	.47	.56	30.93	5.18	20.90	.57	67.13	84.11	.37	.13	48
49	97.96	89.11	74.18	54.19	.51	4.75	21.33	45.95	.46	.35	.51	.15	49
50	.87	88.91	73.88	53.82	30.09	4.31	21.76	46.34	67.78	.59	.64	100.17	50
51	.77	.71	.58	.45	29.67	3.87	22.19	46.73	68.10	84.82	.77	.19	51
52	.67	.50	73.28	53.08	29.25	.44	22.61	47.12	.42	85.05	95.90	.21	52
53	.57	.29	72.98	52.71	28.83	3.00	23.04	.50	68.74	.28	96.03	.22	53
54	.47	88.08	.68	52.34	28.41	2.56	.47	47.89	69.06	.51	.15	.23	54
55	97.37	87.87	.38	51.97	27.99	2.13	23.89	48.27	.38	.74	.27	.24	55
56	.27	.66	72.08	.60	.57	1.69	24.32	48.65	69.70	85.97	.39	100.25	56
57	.16	.45	71.78	51.22	27.15	1.25	24.74	49.04	70.01	86.20	.51	.26	57
58	97.05	.24	.47	50.84	26.73	0.81	25.16	.42	.32	.42	.63	.26	58
59	96.94	87.02	71.16	.46	26.31	− 0.38	25.59	49.80	.63	.64	.75	.26	59
60	− 96.83	−86.80	−70.85	−50.08	−25.89	+ 0.06	+26.01	+50.18	+70.94	+86.86	+96.86	+100.26	60

ZONE OBSERVATIONS.

16—01——1

1894 JANUARY 13. ZONE 1. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	......	53.9	55.7	57.5	59.6	1.7	a	50 27.30	55 20 8.2 5.5	I 39.256	2 50 27.17	−16 27 9.41	−16 531
2	......	4.0	5.7	9.9	12.0	14.2	b_2 c_3	51 14.23	55 20 " "	I 41.300	2 51 14.10	16 27 48.64	16 532
3	......	15.2	17.0	18.9	21.0	23.1	(a)	1 48.69	55 26 13.1 9.3	I 45.563	3 1 48.42	16 35 18.71	16 561
4	8.8	13.1	15.8	17.4	21.7	23.8	b_1 c_2	2 25.94	55 34 13.4 9.7	I 44.687	3 2 25.64	[16 43 3.06]	16 566
5	9.0	4.5	7.2	8.8	19.5	21.5	b_1 c_5	4 17.29	55 16 10.6 7.3	II 42.375	3 4 17.00	16 24 17.28	16 572
6	8.0	36.0	38.0	40.0	42.3	44.4	c	4 40.15	55 16 " "	VII 40.560	3 4 39.86	16 23 46.86	16 574
7	7.0	33.1	35.1	37.5	39.7	41.5	c	7 37.39	55 16 5.7 3.5	....	3 7 37.06	16 26 3	16 590
8	......	24.3	26.6	28.4	30.4	32.3	e	7 58.72	55 16 " "	(VII) 33.207	3 7 58.39	[16 21 23.91]	16 593
9	9.2	43.6	45.5	47.4	49.2	51.4	a	10 16.97	54 52 14.0 8.9	III 43.598	3 10 16.65	16 0 45.35	16 600
10	8.9	3.7	5.4	7.3	9.4	11.5	a	12 37.07	55 18 7.2 4.3	I 41.110	3 12 36.68	−16 25 52.68	−16 606
11	6.8	16.0	17.8	19.7	21.6	23.8	a	16 49.35	55 0 6.8 3.7	I 45.862	3 16 48.95	−16 9 23.59	−16 620
12	7.8	19.1	21.1	23.0	24.9	27.1	a	18 52.69	55 28 19.6 16.2	I (47).618	3 18 52.21	16 37 41.92	16 628
13	......	12.0	13.8	15.8	17.9	20.0	(a)	19 45.45	54 52 2.2 28.8	III 42.462	3 19 45.04	16 0 16.86	16 630
14	9.2	24.0	25.7	27.5	29.5	31.7	a	21 57.25	54 58 28.7 26.5	III 46.435	3 21 56.80	16 7 30.84	16 635
15	8.9	29.8	31.6	33.6	35.5	37.8	a	24 3.29	55 24 9.0 5.7	I 41.658	3 24 2.76	16 32 10.03	16 642
16	8.6	12.4	14.5	16.7	19.0	21.0	c	26 16.72	54 44 5.9 2.6	I 48.233	3 26 16.24	15 54 11.18	16 650
17	8.2	2.5	4.2	6.1	8.3	10.4	a	28 35.84	54 44 " "	I 44.939	3 28 35.34	15 53 9.52	16 656
18	7.8	47.4	49.2	51.0	53.0	55.2	a	30 20.78	55 16 6.3 5.0	I 41.571	3 30 20.20	16 24 9.15	16 663
19	8.8	9.3	11.3	13.2	15.2	17.4	a	33 42.85	54 58 1.5 28.3	I 44.946	3 33 42.27	16 7 8.32	16 674
20	7.2	16.8	18.8	20.7	22.7	24.8	a	34 50.32	54 58 " "	I B 48.205	3 34 49.73	−16 4 58.61	−16 679
21	8.6	52.7	54.4	56.2	58.0	0.4	a	36 25.99	55 28 28.7 26.2	III 46.486	3 36 25.32	−16 37 39.72	−16 686
22	7.6	47.5	49.8	52.0	54.1	56.2	c	36 51.93	55 28 " "	(V) 47.881	3 36 51.25	16 38 8.11	16 687
23	7.5	13.9	15.9	18.0	20.2	22.5	c	38 18.11	55 14 7.2 3.8	(V) 45.885	3 38 17.44	16 23 38.14	16 689
24	......	16.7	18.8	20.8	22.7	24.5	e	39 51.02	55 14 " "	(VII) 39.540	3 39 50.34	[16 21 39.54]	16 694
25	8.7	9.1	11.1	13.0	15.0	17.2	a	43 42.67	55 6 4.0 0.8	I 42.790	3 43 41.98	16 14 34.83	16 705
26	8.8	16.0	18.1	20.2	22.5	24.6	c	46 20.29	55 22 2.5 0.7	I 37.526	3 46 19.54	16 28 55.84	16 711
27	......	8.6	10.8	12.9	15.1	17.3	c	50 12.95	55 22 " "	V B 49.628	3 50 12.16	16 29 39.16	16 728
28	8.2	1.6	3.4	5.2	7.1	9.5	a	53 34.99	55 22 " "	I 46.146	3 53 34.16	16 31 43.43	16 745
29	9.5	41.5	43.5	45.7	47.7	49.9	c	57 45.66	55 12 4.8 2.4	I 43.283	3 57 44.82	16 20 52.48	....
30	7.8	37.6	39.4	41.1	43.2	45.4	a	58 10.96	55 18 28.0 25.3	I 46.977	3 58 10.10	−16 27 56.34	−16 765
31	......	35.0	36.7	38.7	40.6	42.9	a	59 8.34	54 50	....	3 59 7.53	−16 1 44	−16 767
32	7.0	......	......	......	......	......	......	....	(55 6) 2.6 29.5	I 45.054	4 2 25	16 15 25.70	16 782
33	8.5	......	4.5	6.4	8.2	10.6	a	4 36.12	55 30 9.9 6.9	I 46.660	4 4 35.17	16 40 5.87	16 793
34	6.9	33.7	36.4	38.0	42.2	44.2	b_1 c_2	4 46.48	55 30 " "	(V) 42.908	4 4 45.53	16 38 57.96	16 796
35	......	20.0	21.7	23.7	25.6	27.9	(a)	6 53.37	55 6 7.2 3.9	....	4 6 52.47	16 13 40	16 807
36	7.3	58.1	0.0	1.9	3.9	6.0	a	9 31.57	55 6 " "	I 42.651	4 9 30.64	16 14 47.96	16 814
37	9.0	56.1	58.0	59.8	1.7	4.0	a	32 29.36	54 4 5.4 1.0	I 43.031	4 32 28.40	−15 13 1.70	−15 822

Reduction Elements. Zone 1.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
January 13.3....	+0.324	+0.024	+0.386	+0.326	+0.041	+0.456
13.4....	+0.328	+0.058	+0.526			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ρ Ceti		σ Ceti		π Ceti		τ² Eridani		Lalande 8205		53 Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	51 35 56.90		54 31 30.25		53 7 59.90		60 16 5.05		59 44 3.60		53 20 20.55	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.920	5 31.40	47.540	6 22.04	45.750	5 47.46	44.270	5 18.56	41.393	4 24.06	45.150	5 36.48
II Red. to Mer.	.880	1.68	.500	1.65	.710	1.67	.200	1.59	.362	1.59	44.993*	1.70
VI Inclination	.710		.440		.588		.055		.187			—0.81
VII Refraction	.710	1 15.1	.390	1 23.6	.553	1 19.5	.000	1 44.3	.119	1 42.3		1 20.4

	60 Eridani		64 Eridani	
	° ′ ″		° ′ ″	
CIRCLE READING.	55 14 4.35		51 32 2.90	
	r	′ ″	r	′ ″
I Microm. Eq.	43.788	5 9.29	42.950	4 53.48
II Red. to Mer.	.663	1.65	.890	1.68
VI Inclination	.568		.732	
VII Refraction	.552	1 26.2	.647	1 15.3

*Bisection at V.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ρ Ceti	2 21 6.55	11	+0.73	−17.23	51 42 45.1	34.5
σ Ceti	2 27 20.59	10	+0.75	−17.17	54 39 17.5	37.2
π Ceti	2 39 21.53	11	+0.74	−17.19	53 15 8.5	37.6
τ² Eridani	2 46 30.75	11	+0.80	−17.18	60 23 9.5	36.5
47 H. Cephei	2 52 16.91	8	+0.33	[−16.89]	319 56	....
Lalande 8205	4 16 18.91	11	+0.79	−17.17	59 50 11.5	37.0
53 Eridani	4 33 36.86	12	+0.74	−17.13	53 27 18.3	37.7
Groombridge 848	4 34 54.28	12	+0.35	[−17.37]	323 12	....
60 Eridani	4 45 42.30	11	+0.76	−17.10	55 20 41.5	36.5
64 Eridani	4 55 17.67	11	+0.73	−17.17	51 38 13.4	37.1

2.562^h .... *dt* .... −17.192^s
Hourly rate .... + 0.0242

Adopted Equator Point..........38° 56′ 36.″76

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
2 8	29.825	38.8	37.4
2 46	29.825	37.8	36.4
3 18	29.825	36.7	35.5
3 40	29.815	37.8	35.4
4 16	29.815	36.6	34.6
4 45	29.815	35.9	34.4

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			$D =$ Z. D. S. to 1894.0			R		
			54°	55°	56°	54°	55°	56°	54°	55°	56°
°	s	h m	s	s	s	″	″	″	″	″	″
54	+0.745	2 30	+16.719	+16.617	+16.512	−3.52	−3.83	−4.14	81.70	84.74	87.96
55	0.752	3 0	16.348	16.230	16.110	2.40	2.70	2.99	81.83	84.88	88.10
56	+0.760	3 30	16.014	15.883	15.752	1.30	1.58	1.85	81.90	84.96	88.19
		4 0	15.719	15.581	15.438	−0.24	−0.48	−0.74	81.98	85.04	88.27
		4 30	15.477	15.329	15.178	+0.78	+0.56	+0.34	82.07	85.13	88.37
		5 0	+15.286	+15.132	+14.975	+1.73	+1.54	+1.35	82.11	85.17	88.41

1894 JANUARY 23. ZONE 2. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°	
1	7.8	17.8	19.8	22.0	24.1	26.2	c	26 21.99	52 42 5.0 28.0	(V)	43.280	3 26 29.30	−13 50 25.23	−13	674
2	8.5	8.9	10.9	13.0	15.1	17.1	c	28 13.01	52 50 5.0 29.4	III	45.789	3 28 20.28	13 59 13.21	14	691
3	7.8	58.9	1.0	3.3	5.5	7.5	c	33 3.25	53 10 5.0 27.6	III	40.063	3 33 10.44	14 17 26.34	14	711
4	8.2	26.9	28.9	30.8	32.8	34.9	a	36 0.17	53 10 “ “	I B	43.330	3 36 7.33	14 15 15.86	14	721
5	7.8	25.8	27.9	30.0	32.1	34.2	c	36 30.01	53 10 “ “	III	45.830	3 36 37.16	14 19 18.71	14	726
6	8.6	42.8	44.7	46.6	48.6	50.7	a	39 16.01	53 16 5.0 26.8	I	44.363	3 39 23.12	14 24 49.11	14	738
7	7.8	24.0	25.8	27.7	29.7	31.9	a	44 57.12	53 2 5.0 28.6	I	46.305	3 45 4.20	14 11 29.02	14	757
8	8.8	15.0	16.8	18.7	20.7	22.9	a	50 48.15	53 14 5.0 27.1	I	45.302	3 50 55.15	14 23 12.49	14	780
9	8.4	46.8	48.6	50.6	52.4	54.7	a	52 19.88	52 46 5.0 28.2	I	45.628	3 52 26.92	13 55 18.77	14	786
10	9.0	5.4	7.0	9.0	11.1	13.4	a	55 38.44	52 46 “ “	I	46.274	3 55 45.45	−13 55 32.65	−14	797
11	8.6	47.9	49.8	52.0	54.0	56.1	c	56 51.97	52 56 5.0 28.5	(III)	48.814	3 56 58.95	−14 6 23.98	−14	803
12	7.8	20.3	22.0	24.0	26.0	28.0	a	58 53.30	52 36 5.0 28.6	I	46.670	3 59 0.30	13 45 41.57	13	804
13	8.2	26.0	27.7	29.6	31.7	33.9	a	59 59.13	53 22 5.0 27.1	I	45.550	4 0 6.02	14 31 22.00	14	813
14	8.5	21.8	23.6	25.6	27.5	29.7	a	1 55.00	53 30 5.0 28.0	I	48.691	4 2 1.85	14 40 23.51	14	820
15	7.0	40.6	42.5	44.4	46.2	48.5	a	6 13.80	53 30 “ “	I B	49.160	4 6 20.61	14 37 22.32	14	832
16	8.0	18.9	20.8	22.7	24.6	26.7	a	6 52.10	53 30 “ “	I	48.615	4 6 58.90	14 40 24.49	14	834
17	7.9	49.1	51.0	52.9	54.7	57.0	(a)	8 22.29	53 24 5.0 27.6	I	49.525	4 8 29.09	14 34 42.08	14	840
18	7.8	55.6	58.0	59.9	1.7	3.6	e	9 30.39	52 58 5.0 28.3	VII	47.247	4 9 37.24	14 8 3.39	14	844
19	7.8	4.5	6.5	8.3	10.4	12.4	a	11 37.71	53 2 5.0 28.2	IV	43.107	4 11 44.53	14 10 43.53	14	854
20	7.8	37.7	39.3	41.3	43.3	45.3	a	15 10.77	53 40 5.0 27.6	I	46.918	4 15 17.48	−14 49 56.55	−14	872
21	7.6	14.6	16.4	18.3	20.2	22.4	a	16 47.72	53 22 5.0 27.3	I	42.740	4 16 54.46	−14 30 36.91	−14	881
22	7.7	28.9	30.6	32.6	34.7	36.8	a	19 2.03	53 6 5.0 27.1	I	43.429	4 19 8.78	14 14 50.36	14	892
23	7.5	4.0	6.0	8.1	10.2	12.5	c	19 8.17	53 6 “ “	III	43.212	4 19 14.92	14 14 48.07	14	893
24	8.7	17.7	19.6	21.5	23.4	25.6	(a)	21 50.90	53 18 5.0 28.1	I	47.088	4 21 57.60	14 28 2.44	14	901
25	9.0	......	3.7	5.7	7.6	9.8	a	23 35.06	53 2 5.0 28.1	(III)	46.040	4 23 41.78	14 11 44.49	14	907
26	7.0	35.3	37.2	39.4	41.7	43.4	c	24 39.41	53 6 5.0 27.9	(V)	48.030	4 24 46.12	14 16 24.59	14	913
27	8.2	32.3	34.6	36.4	38.3	40.2	e	25 6.98	53 6 “ “	VII	48.111	4 25 13.68	14 16 27.84	14	916
28	8.5	29.6	31.4	33.6	35.9	38.0	c	27 33.71	52 38 5.0 28.7	V	46.650	4 27 40.46	13 47 59.00	13	910
29	8.7	19.5	20.9	22.9	25.0	27.2	a	31 52.49	53 42 5.0 28.2	I	44.184	4 31 59.06	14 51 13.36	14	929
30	7.2	2.5	4.5	6.5	8.4	10.4	e	34 37.04	53 20 5.0 27.7	VII A	46.220	4 34 43.63	−14 33 10.04	−14	936
31	8.1	41.8	43.4	45.4	47.3	49.5	a	39 14.84	53 28 5.0 27.7	I	47.034	4 39 21.38	−14 38 10.57	−14	951
32	8.3	35.2	36.9	38.9	40.9	43.0	a	41 8.34	53 28 “ “	I	49.301	4 41 14.86	14 38 54.67	14	958
33	7.9	56.4	58.3	0.3	2.1	4.3	a	49 29.62	53 20 5.0 27.0	I	47.336	4 49 36.10	−14 30 20.98	−14	990

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″ ″		r	h m s	° ′ ″	
34	7.7	6.0	8.0	10.0	11.8	14.0	a	50 39.36	53 44	5.0 27.0	I	45.657	4 50 45.78	−14 53 50.72	−14 994
35	7.7	29.2	31.0	33.0	35.0	37.1	a	53 2.31	52 42	5.0 27.7	I	44.868	4 53 8.86	13 51 34.58	13 1032
36	8.0	56.9	59.3	1.2	2.9	4.9	e	57 31.67	53 2	5.0 26.5	VII	44.038	4 57 38.14	−14 11 26.34	−14 1019

1894 JANUARY 23. ZONE 3. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

37	8.8	38.9	41.1	43.0	44.8	46.8	e	21 13.48	53 28	5.0 26.7	VII	45.561	5 21 19.75	−14 38 9.30	−14 1131
38	7.9	54.5	56.1	58.0	0.1	2.1	a	24 27.46	53 4	5.0 27.0	I	44.837	5 24 33.77	14 13 51.47	14 1146
39	8.2	29.7	31.4	33.5	35.4	37.5	a	26 2.78	52 56	5.0 28.3	I	45.512	5 26 9.10	14 6 5.47	14 1156
40	7.4	6.8	9.0	11.0	13.1	15.3	c	26 11.05	52 40	5.0 26.5	V	40.780	5 26 17.42	13 48 37.31	13 1171
41	8.0	20.8	22.9	25.0	27.1	29.4	c	27 25.05	52 40	" "	V	45.754	5 27 31.41	13 50 12.66	13 1176
42	7.8	43.2	45.0	46.9	48.8	51.0	a	29 16.37	53 42	5.0 28.1	I	46.244	5 29 22.57	14 52 23.11	14 1170
43	8.2	34.0	36.2	38.3	40.5	42.6	c	30 38.33	53 36	5.0 27.2	I	44.105	5 30 44.54	14 45 42.39	14 1177
44	.....	24.4	26.7	28.9	31.0	33.1	c	31 28.83	52 44	5.0 26.1	V	42.293	5 31 35.16	13 53 8.97	13 1192
45	7.9	41.5	43.6	45.8	47.8	49.9	c	32 45.73	53 44	5.0 26.7	(V)	45.629	5 32 51.91	14 54 16.17	14 1187
46	7.8	1.9	4.0	5.9	7.8	9.9	e	33 36.50	53 14	5.0 26.1	VII	44.475	5 33 42.75	−14 23 54.45	−14 1191
47	8.0	8.6	10.6	12.8	14.9	17.0	c	35 12.79	52 46	5.0 28.0	(V)	41.970	5 35 19.10	−13 55 5.91	−13 1209
48	7.9	9.0	10.9	12.9	14.8	17.0	[illegible]	36 42.25	53 16	5.0 27.2	I	44.280	5 36 48.48	14 25 48.19	14 1208
49	8.0	4.6	6.6	8.9	11.0	13.1	c	37 8.85	52 56	5.0 27.9	V	43.038	5 37 15.13	14 5 27.67	14 1210
50	8.2	12.6	14.6	16.7	19.0	21.2	c	38 16.83	53 36	5.0 27.9	V	45.130	5 38 23.01	14 46 9.94	14 1216
51	8.2	50.1	52.3	54.1	56.0	58.0	e	38 24.66	53 36	" "	VII B	48.950	5 38 30.84	14 44 11.70	14 1217
52	7.8	29.7	31.5	33.5	35.5	37.7	a	41 2.95	53 36	" "	III	53.560	5 41 9.11	14 48 50.26	14 1228
53	7.3	27.0	28.8	30.7	32.6	34.9	a	44 0.12	53 10	5.0 28.3	III	47.260	5 44 6.34	14 20 50.97	14 1243
54	7.0	53.3	55.4	57.6	59.7	1.9	c	44 57.59	53 20	5.0 25.9	V	46.985	5 45 3.78	14 30 47.15	14 1251
55	8.5	59.0	1.2	3.3	5.5	7.7	c	46 3.35	53 [illegible]	5.0 27.6	(V)	46.950	5 46 9.58	14 12 47.12	14 1257
56	7.5	14.5	16.5	18.7	20.9	23.0	c	49 18.73	52 58	5.0 28.3	(III)	47.270	5 49 24.96	−14 8 53.51	−14 1272
57	7.8	56.6	58.6	0.6	2.3	4.6	[illegible]	50 29.81	52 50	5.0 29.0	III	44.295	5 50 36.06	−13 59 57.54	−14 1277
58	7.8	2.8	4.9	7.1	9.3	11.4	c	53 7.11	53 2	5.0 27.6	III	48.285	5 53 13.32	14 13 14.74	14 1292
59	7.9	6.1	8.2	10.5	12.5	14.6	c	54 10.39	53 2	" "	III	47.130	5 54 16.60	14 12 53.34	14 1297
60	7.8	59.8	1.7	4.0	6.1	8.3	c	55 3.99	53 32	5.0 26.7	III	47.087	5 55 10.11	14 42 53.91	14 1300
61	7.6	21.6	23.3	25.2	27.2	29.4	a	57 54.68	53 20	5.0 26.3	I	43.685	5 58 0.82	14 29 48.19	14 1315
62	8.0	11.3	13.5	15.7	17.8	19.9	c	59 15.65	52 46	5.0 27.4	III	47.240	5 59 21.87	13 56 57.39	13 1339
63	7.9	25.8	27.9	30.0	32.1	34.4	c	0 30.05	53 8	5.0 26.4	V	44.572	6 0 36.22	14 18 9.42	14 1328
64	6.0	27.2	29.5	31.6	33.8	35.9	c	1 31.61	53 44	5.0 26.9	(III)	48.946	6 1 37.68	14 55 33.32	14 1331
65	7.9	41.3	43.0	45.0	46.9	49.0	a	3 14.34	53 4	5.0 26.7	III	46.890	6 3 20.51	14 14 53.37	14 1341
66	8.2	53.5	55.0	57.0	59.0	1.4	a	4 26.57	53 38	5.0 26.8	I	47.043	6 4 32.65	−14 48 56.73	−14 1346
67	8.3	0.4	2.1	4.0	6.0	8.1	[illegible]	5 33.46	53 22	5.0 26.3	V	43.200	6 5 39.58	−14 31 46.65	−14 1353
68	7.7	8.8	11.0	13.3	15.4	17.6	c	7 13.23	53 16	5.0 25.8	III	43.561	6 7 19.36	14 25 52.25	14 1359
69	8.3	44.5	46.1	48.1	50.0	52.3	a	11 17.53	53 14	5.0 26.2	I	43.304	6 11 23.66	14 23 47.90	14 1379
70	8.0	32.3	34.3	36.6	38.6	40.8	c	12 36.53	53 18	5.0 26.4	III	42.692	6 12 42.65	14 27 39.05	14 1387
71	8.6	17.6	19.7	21.9	24.0	26.1	c	13 21.87	53 0	5.0 26.4	V	45.791	6 13 28.03	14 10 39.25	14 1393
72	8.1	15.5	17.4	19.2	21.3	23.3	a	14 48.65	53 8	5.0 26.5	III	42.770	6 14 54.79	14 17 41.30	14 1402
73	8.0	2.4	4.0	6.0	8.0	10.0	a	16 35.39	53 8	" "	I B	46.065	6 16 41.53	14 15 30.95	14 1412
74	....	56.6	58.6	0.9	3.0	5.0	c	17 0.83	53 8	" "	VI A	43.446	6 17 6.96	14 21 10.66	14 1415
75	7.0	35.0	36.9	38.9	41.0	43.0	a	19 8.36	53 50	5.0 27.8	III	47.118	6 19 14.39	15 1 9.00	14 1428
76	7.5	41.5	43.8	45.9	48.0	50.1	c	19 45.87	53 36	5.0 26.5	(V)	46.089	6 19 51.93	−14 46 50.08	−14 1430
77	8.1	42.9	45.0	47.0	49.3	51.3	c	21 47.11	52 56	5.0 28.7	V	44.030	6 21 53.26	−14 6 11.25	−14 1446
78	8.0	50.1	52.3	54.2	56.0	58.0	e	22 24.69	53 26	5.0 26.4	VII	47.854	6 22 30.77	14 37 26.05	14 1453
79	8.7	55.6	57.3	59.2	1.1	3.3	a	25 28.62	53 10	5.0 27.1	I	48.026	6 25 34.73	14 21 25.71	14 1473
80	8.2	14.6	16.7	18.7	20.9	22.9	c	26 18.77	53 48	5.0 26.6	I	41.426	6 26 24.80	[14 57 22.02]	14 1479
81	8.3	59.0	0.7	2.7	4.7	6.8	a	28 32.05	52 52	5.0 27.7	I	41.263	6 28 38.21	14 1 18.11	13 1542
82	8.5	17.5	19.5	21.8	23.9	25.9	c	30 21.73	52 44	5.0 27.8	V A	38.363	6 30 27.90	13 55 39.99	13 1553
83	8.0	27.8	29.9	31.9	33.9	35.8	e	31 2.53	52 44	" "	VII	36.590	6 31 8.71	13 51 55.07	13 1559
84	.....	54.4	56.6	58.6	0.6	2.4	(e)	32 29.15	53 0	5.0 26.4	(VII)	44.475	6 32 35.28	14 10 25.96	14 1511
85	8.0	50.2	52.5	54.5	56.4	58.3	e	34 24.97	53 18	5.0 27.6	VII	42.653	6 34 31.05	14 27 53.76	14 1524
86	7.8	20.5	22.3	24.1	26.1	28.2	a	0 53.61	53 32	5.0 27.2	III	46.112	7 0 59.67	−14 43 11.20	−14 1710
87	8.4	46.0	48.0	50.1	52.3	54.3	c	1 50.15	53 52	5.0 27.4	III	46.148	7 1 56.17	−15 3 13.16	−14 1716
88	8.5	7.6	9.4	11.0	13.1	15.4	a	3 40.67	53 34	5.0 27.0	III	45.125	7 3 46.73	14 44 53.60	14 1728
89	8.0	40.6	42.6	44.6	46.9	48.9	c	3 44.73	53 34	" "	(VI)	(41).129	7 3 50.79	14 43 39.93	14 1729
90	8.7	17.6	20.0	21.9	23.7	25.5	e	3 52.29	53 34	" "	VII	45.210	7 3 58.35	14 44 58.39	14 1731
91	8.2	22.3	24.4	26.5	28.7	30.8	c	7 26.55	53 28	5.0 27.2	I	42.168	7 7 32.63	[14 37 57.21]	14 1763
92	7.7	55.3	57.0	59.0	0.8	3.0	a	10 28.35	53 16	5.0 26.4	I	42.641	7 10 34.45	14 26 6.82	14 1790
93	8.3	37.3	39.0	41.0	43.0	45.0	a	11 10.37	53 8	5.0 27.8	III	46.336	7 11 16.49	14 19 19.63	14 1795
94	7.8	21.0	23.0	25.0	27.4	29.5	(c)	11 25.19	53 8	" "	VI	48.440	7 11 31.31	14 20 2.18	14 1797
95	8.2	0.9	3.0	5.0	7.1	9.4	c	13 5.09	53 40	....	....	....	7 13 11.14	−14 49 23	−14 1816

Reduction Elements. Zones 2 and 3.

	OBSERVED.			ADOPTED.		
1894.	c	b	a	c	b	a
	s	s	s	s	s	s
January 23.3	+0.339	−0.061	+0.463	+0.306	−0.076	+0.514
23.5	+0.272	−0.092	+0.418			
			+0.660			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 6476		20 Eridani		τ^6 Eridani		30 Eridani		53 Eridani		64 Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	51 52 1.60		56 38 1.95		62 24 1.35		44 30 1.90		53 20 1.35		51 32 1.65	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	45.941	5 50.62	47.353	6 17.23	42.140	4 38.68	47.501	6 20.19	46.463	6 0.70	43.305	5 1.19
II Red. to Mer.	.897	1.68	.297	1.63	.121	1.57	.443	1.74	.420	1.67		1.66
VI Inclination	.738		.116		41.930		.290		.276		.205	0.54
VII Refraction	.686	1 15.1	.093	1 29.6	.940	1 52.6	.250	58.1	.226	1 19.5	.141	1 14.5

	ε Leporis		β Eridani		ζ Leporis		η Leporis		Piazzi VI. 303		γ Canis Majoris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	61 20 1.15		44 4 1.85		53 42 0.80		53 2 1.30		64 6 1.65		54 18 1.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	45.470	5 41.23		5 1.71		4 59.11	41.843	4 32.87	42.692	4 48.94	45.985	5 50.15
II Red. to Mer.	.430	1.58		1.73	43.225	1.67	.805	1.67	.655	1.55	.862	1.66
VI Inclination	.230		43.260*	2.30	.100	0.82	.655		.454		.692	
VII Refraction	.160	1 48.1	.230	57.3	.000	1 20.7	.611	1 18.8	.490	2 2.2	.625	1 22.8

	Piazzi VII. 85		Piazzi VII. 116	
	° ′ ″		° ′ ″	
CIRCLE READING.	47 36 1.35		50 10 1.60	
	r	′ ″	r	′ ″
I Microm. Eq.	47.239	6 15.44	46.121	5 55.15
II Red. to Mer.	.212	1.71	.111	1.70
VI Inclination	.022		.030	
VII Refraction	.010	1 5.3	45.955	1 11.4

* Bisection at e_5.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
48 H. Cephei	3 7 1.96	11	−0.33	[−9.50]	321 36	....
Lalande 6476	3 24 45.15	11	+0.68	−9.68	51 59 9.0	42.8
20 Eridani	3 31 37.24	11	+0.73	−9.71	56 45 50.4	41.6
τ^6 Eridani	3 42 26.92	11	+0.79	−9.74	62 30 34.2	42.8
30 Eridani	3 47 37.05	11	+0.62	−9.60	44 37 21.9	42.0
53 Eridani	4 33 29.44	11	+0.70	−9.76	53 27 23.2	41.3
64 Eridani	4 55 10.19	11	+0.68	−9.69	51 38 19.5	41.9
ε Leporis	5 1 8.43	11	+0.78	−9.73	61 27 32.1	41.2
β Eridani	5 2 48.25	11	+0.61	−9.63	44 10 5.9	42.8
19 H. Camelopardalis.	5 5 19.25	7	−0.44	[−9.28]	319 50	....
ζ Leporis	5 42 19.26	11	+0.70	−9.70	53 48 23.1	42.1
η Leporis	5 51 44.67	11	+0.69	−9.59	53 7 54.6	41.7
Piazzi VI. 303	6 54 25.64	11	+0.81	−9.80	64 12 54.3	42.2
γ Canis Majoris	6 59 8.15	11	+0.71	−9.81	54 25 16.1	41.7
Piazzi VII. 85	7 17 7.47	11	+0.64	−9.73	47 43 23.8	41.9
Piazzi VII. 116	7 23 3.03	11	+0.66	−9.70	50 17 9.8	41.2
λ Ursæ Minoris S. P.	7 27 41.04	5	+8.16	[−3.47]	307 56	....

h		s
3.400	*dt*	−9.675
	Hourly rate	−0.015
		° ′ ″
	Adopted Equator Point	38 56 41.9

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 17	30.065	47.9	45.9
3 42	30.055	46.0	45.2
4 1	30.055	45.5	44.3
4 48	30.055	45.0	43.8
5 20	30.055	44.6	43.3
5 57	30.055	43.4	42.3
6 37	30.055	43.1	41.3
7 32	30.035	42.2	40.5

Notes.

37. Thin clouds.
84. Close double, mea observed. Magn tudes 8.4—8.4.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			$D =$ Z. D. S. to 1894.0			R		
			52°	53°	54°	52°	53°	54°	52°	53°	54°
°	s	h m	s	s	s	"	"	"	"	"	"
52	+0.682	3 0	+16.678	+16.566	+16.451	−2.49	−2.79	−3.10	75.11	77.86	80.74
53	0.691	3 30	16.362	16.236	16.109	1.59	1.89	2.19	75.23	77.98	80.87
54	+0.702	4 0	16.080	15.943	15.804	−0.75	1.03	1.31	75.40	78.16	81.06
		4 30	15.837	15.691	15.545	+0.03	−0.23	−0.48	75.46	78.22	81.12
		5 0	15.637	15.487	15.336	0.74	+0.51	+0.28	75.53	78.29	81.19
		5 30	15.484	15.332	15.178	1.36	1.16	0.98	75.61	78.38	81.28
		6 0	15.382	15.230	15.075	1.87	1.71	1.55	75.74	78.51	81.41
		6 30	15.331	15.180	15.029	2.27	2.15	2.03	75.84	78.61	81.53
		7 0	15.332	15.186	15.040	2.57	2.49	2.41	75.91	78.69	81.60
		7 30	+15.386	+15.247	+15.108	+2.73	+2.69	+2.66	75.94	78.72	81.64

1894 JANUARY 27. ZONE 4. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ " "	r	h m s	° ′ "	°
1	7.8	7.8	9.9	12.0	14.0	16.1	c	19 11.97	53 18 5.0 28.4	(III) 45.450	3 19 21.01	−14 27 4.32	−14 658
[illegible]	8.1	37.0	39.1	43.3	44.9	47.6	c_4 d_3	21 34.88	53 18 " "	VII A 43.100	3 21 43.88	14 29 36.58	14 669
3	8.1	0.4	2.0	4.0	6.0	8.2	a	28 33.39	52 48 5.0 28.8	I 44.460	3 28 42.39	13 56 46.71	14 696
4	7.0	12.9	14.6	16.5	18.7	20.8	a	36 46.06	53 28 5.0 28.0	(III) 45.470	3 36 54.90	[14 37 12.78]	14 729
5	6.9	2.0	4.3	6.5	8.6	10.8	c	37 6.45	53 28 " "	(III) A 47.270	3 37 15.28	14 41 0.28	14 732
6	8.5	35.9	38.0	40.1	42.0	44.4	c	43 40.09	52 48 5.0 28.2	(V) 46.070	3 43 48.94	13 57 27.33	14 752
7	8.4	31.3	33.0	35.0	36.9	39.0	a	47 4.30	52 44 5.0 29.3	I 45.460	3 47 13.14	13 53 14.23	14 763
8	7.6	11.5	13.5	15.6	17.7	19.9	c	48 15.65	52 48 5.0 28.4	(III) 46.560	3 48 24.46	13 57 37.25	14 767
9	8.4	39.0	41.0	43.2	45.3	47.2	c	49 43.15	52 58 5.0 29.4	VI 44.370	3 49 51.93	14 6 59.55	14 775
10	7.9	17.6	19.7	21.7	23.8	25.9	c	51 21.75	52 58 " "	(III) B 43.230	3 51 30.52	−14 3 23.93	−14 781
11	8.6	51.3	53.3	55.7	57.8	59.9	c	54 55.61	52 38 5.0 28.0	V A 43.310	3 55 4.38	−13 49 52.50	−13 788
12	7.8	54.6	56.3	58.4	0.3	2.5	a	59 27.71	52 58 5.0 28.6	I 44.940	3 59 36.40	14 7 10.45	14 810
13	8.6	20.7	22.4	24.4	26.4	28.5	a	0 53.80	53 10 5.0 29.8	I (42).190	4 1 2.45	14 18 19.92	14 816
14	8.0	3.0	5.0	7.4	9.4	11.6	c	1 7.29	53 10 " "	(III) 38.520	4 1 15.94	14 17 11.98	14 818
15	8.0	15.1	16.9	18.9	20.9	......	a	6 48.34	53 40 5.0 29.0	I 42.735	4 6 56.88	14 48 34.11	14 833
16	7.5	19.4	21.6	23.7	25.8	28.0	c	7 23.71	52 44 5.0 27.8	(III) 46.220	4 7 32.37	13 53 39.44	14 837
17	7.9	26.3	28.0	30.0	32.0	34.0	a	9 59.39	53 14 5.0 28.0	I 48.710	4 10 7.95	14 24 27.71	14 846
18	7.9	9.7	11.9	14.0	16.1	18.1	c	10 13.97	53 30 5.0 27.7	V 45.280	4 10 22.50	14 39 26.54	14 848
19	7.8	6.0	7.8	9.7	11.6	13.7	a	12 39.00	52 34 5.0 28.4	I 45.700	4 12 47.63	13 43 30.20	13 852
20	8.7	4.7	6.8	9.0	11.0	13.3	c	13 8.97	52 42 5.0 28.4	V 43.970	4 13 17.58	−13 51 1.30	−13 855
21	8.0	26.0	27.8	29.6	31.8	33.9	a	15 59.16	53 18 5.0 27.9	I 45.760	4 16 7.67	−14 27 34.67	−14 875
22	8.3	15.9	17.8	19.8	21.7	24.0	a	16 49.23	53 42 5.0 27.6	I 45.300	4 16 57.68	14 51 27.24	14 882
23	8.0	22.4	24.6	26.5	28.5	30.5	e	16 57.05	53 42 " "	VII B 37.400	4 17 5.51	14 45 49.37	14 884
24	7.8	12.8	14.6	16.5	18.3	20.5	a	19 45.93	53 42 " "	I 42.240	4 19 54.35	14 50 30.46	14 897
25	7.6	29.8	31.5	33.4	35.4	37.6	a	22 2.93	53 42 " "	I 43.025	4 22 11.33	14 50 46.57	14 903
26	7.9	40.0	41.7	43.7	45.6	47.7	a	24 13.00	52 44 5.0 27.9	I 43.290	4 24 21.52	13 52 50.27	13 892
27	7.5	50.9	52.7	54.6	56.6	58.8	a	25 23.97	52 44 " "	I B 40.140	4 25 32.49	13 48 38.67	13 896
28	7.6	7.3	8.9	10.9	12.8	15.0	a	26 40.24	52 44 " "	I 38.950	4 26 48.75	13 51 28.91	13 904
29	8.5	37.4	39.5	41.7	43.9	46.0	c	26 41.71	52 44 " "	V 37.610	4 26 50.22	13 51 6.83	13 905
30	8.4	58.9	1.0	3.2	5.4	7.5	c	28 3.21	52 52 5.0 28.0	(III) 46.020	4 28 11.68	−14 1 46.35	−14 923
31	8.0	20.0	22.3	24.5	26.6	28.7	c	32 24.43	53 10 5.0 28.1	(III) 44.040	4 32 32.83	−14 19 11.74	−14 931
32	7.7	49.7	51.8	54.0	56.0	58.2	c	34 53.95	53 38 5.0 27.6	III 45.310	4 35 2.26	14 47 38.24	14 937
33	7.8	26.6	28.7	30.9	32.9	35.0	c	36 30.83	52 58 5.0 28.8	I 46.410	4 36 39.22	14 7 57.02	14 942
34	7.6	16.8	18.9	20.8	22.7	24.7	e	36 51.31	53 44 5.0 27.4	VII 42.275	4 36 59.60	14 52 44.74	14 943
35	7.8	58.5	0.6	2.7	4.8	7.0	c	42 2.73	52 36 5.0 28.1	III 45.440	4 42 11.14	13 45 41.93	13 972
36	7.6	......	......	......	......	......	......	....	52 46 5.0 28.7	I 47.300	4 45 7	13 56 17.42	14 970
37	7.8	......	......	......	......	......	......	....	52 38 5.0 28.7	III 47.630	4 45 45	13 48 25.49	13 987
38	7.7	......	......	......	......	......	......	....	53 38 5.0 27.9	V B 48.030	4 47 2	14 45 25.72	14 981
39	8.0	......	......	......	......	......	......	....	53 28 5.0 27.6	III 44.670	4 49 28	14 37 33.23	14 988
40	8.3	......	......	......	......	......	......	....	53 2 5.0 28.2	I 44.360	4 51 15	−14 11 25.56	−14 996
41	7.9	......	......	......	......	......	......	....	52 42 5.0 28.1	III 45.630	4 52 10	−13 51 51.10	−13 1026
42	8.0	......	......	......	......	......	......	....	53 26 5.0 27.4	VII 46.925	4 53 40	14 36 21.25	14 1005
43	7.9	......	......	......	......	......	......	....	53 8 5.0 27.3	I 44.490	4 56 52	14 17 30.87	14 1016
44	8.0	......	......	......	......	......	......	....	52 38 5.0 28.9	I 47.130	4 58 10	13 48 21.31	13 1052
45	8.1	......	......	......	......	......	......	....	53 26 5.0 26.5	VII 48.640	4 58 23	14 36 55.96	14 1022
46	8.0	......	......	......	......	......	......	....	53 30 5.0 27.2	I A 39.540	5 8 20	14 41 16.96	14 1070
47	7.5	......	......	......	......	......	......	....	53 30 " "	V A 46.030	5 9 27	−14 43 24.30	−14 1074

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
48	7.9	......	......	......	......	......	......	......	52 52 5.0 27.4	VII 46.620	5 10 0	−14 2 22.66	−14 1076
49	7.7	......	......	......	......	......	......	......	53 26 5.0 27.6	VI 48.560	5 11 28	14 37 1.32	14 1080
50	7.9	......	......	......	......	......	......	......	52 44 5.0 27.7	I 46.340	5 14 4	−13 54 14.45	−13 1121
51	7.8	......	......	......	......	......	......	......	53 42 5.0 28.8	III 46.310	5 14 53	−14 52 19.32	−14 1094
52	7.9	......	......	......	......	......	......	......	53 32 5.0 26.2	VII 43.600	5 15 59	14 41 29.65	14 1099
53	8.0	......	......	......	......	......	......	......	52 48 5.0 28.7	III 47.260	5 19 35	13 58 37.42	14 1121
54	7.8	52.0	54.0	55.9	57.8	0.0	a	33 25.33	53 38 5.0 28.0	I 47.780	5 33 33.32	14 48 55.02	14 1190
55	8.1	55.6	57.5	59.8	1.8	4.0	c	33 59.75	53 6 5.0 26.5	III 44.620	5 34 7.81	14 15 54.75	14 1195
56	8.3	46.0	48.0	49.9	51.9	54.0	a	35 19.35	53 44 14.7 6.8	III 47.480	5 35 27.31	14 55 1.68	14 1201
57	8.5	29.0	31.3	33.6	35.6	37.7	c	37 33.45	53 4 14.8 5.8	V 44.680	5 37 41.50	14 14 8.90	14 1211
58	8.0	1.2	3.2	5.4	7.4	9.7	c	39 5.39	53 32 5.0 28.0	III 47.520	5 39 13.37	−14 42 54.65	−14 1221

1894 JANUARY 27. ZONE 5. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

59	7.8	55.3	56.8	58.6	0.7	2.8	a	4 28.12	52 52 5.0 28.4	III 46.920	6 4 36.13	−14 2 55.26	−14 1347
60	8.0	58.6	0.5	2.4	4.3	6.4	a	13 31.75	53 6 5.0 28.6	I 49.040	6 13 39.70	14 17 39.44	14 1395
61	7.9	50.3	52.3	54.6	56.8	58.8	c	13 54.57	53 6 " "	III A 43.740	6 14 2.52	14 19 13.65	14 1397
62	7.0	34.7	36.9	38.8	40.8	42.7	e	14 9.30	53 48 5.0 27.3	VII 46.940	6 14 17.15	14 59 6.01	14 1400
63	7.9	12.0	14.1	16.0	17.8	19.9	e	15 46.59	52 58 5.0 28.3	VII 47.100	6 15 54.56	14 9 8.07	14 1409
64	7.8	23.8	25.8	28.0	30.1	32.2	c	17 27.99	53 22 5.0 27.4	V 44.690	6 17 35.90	14 32 22.34	14 1418
65	8.4	......	50.3	52.0	54.0	55.8	e	18 22.55	53 40 5.0 28.7	VII (46).700	6 18 30.41	14 51 2.33	14 1422
66	7.5	3.5	5.7	7.7	9.7	11.5	e	18 38.17	53 40 " "	VII B 44.090	6 18 46.04	14 47 2.02	14 1423
67	7.9	25.7	27.4	29.3	31.4	33.5	a	23 58.74	52 54 5.0 28.2	I 42.120	6 24 6.72	14 3 32.55	14 1462
68	7.8	1.2	2.8	4.9	6.9	8.9	a	24 34.23	52 54 " "	I A 49.290	6 24 42.20	−14 9 2.57	−14 1467
69	8.0	1.0	3.3	5.3	7.6	9.6	c	25 5.37	53 8 5.0 28.3	V 42.520	6 25 13.32	−14 17 44.88	−14 1471
70	8.2	52.2	54.5	56.4	58.3	0.2	e	25 26.93	53 8 " "	VII A 43.950	6 25 34.86	14 21 26.63	14 1473
71	8.0	23.6	25.6	27.9	30.0	32.1	c	27 27.85	52 54 5.0 28.4	III 43.860	6 27 35.82	14 4 9.45	14 1486
72	7.9	31.8	33.6	35.6	37.4	39.6	a	29 4.88	52 54 " "	I 49.570	6 29 12.85	14 5 57.18	14 1493
73	8.0	43.7	46.0	47.9	49.7	51.7	e	29 18.35	53 32 5.0 27.8	VII 45.560	6 29 26.23	14 42 47.36	14 1494
74	7.8	13.5	15.3	17.2	19.0	21.3	a	32 46.65	53 42 5.0 27.5	I 45.560	6 32 54.51	14 52 44.64	14 1512
75	7.8	51.0	53.0	55.2	59.5	1.0	c_3 d_2	32 50.99	52 44 5.0 27.7	VI 45.830	6 32 58.98	13 54 51.38	13 1574
76	8.3	42.7	44.9	46.9	48.8	50.7	e	34 17.45	52 50 5.0 29.0	VII B 45.930	6 34 25.43	13 57 43.22	13 1587
77	7.8	42.6	44.4	46.3	48.1	50.5	a	39 15.73	53 24 5.0 28.5	I 47.400	6 39 23.62	14 35 22.74	14 1560
78	8.0	26.0	27.9	30.0	31.9	33.9	a	39 59.29	53 24 " "	I A 43.910	6 40 7.18	−14 37 29.91	−14 1563
79	8.0	32.0	34.0	35.7	37.9	40.0	a	44 5.22	53 4 5.0 28.5	I 46.020	6 44 13.17	−14 14 58.07	−14 1595
80	7.7	5.7	7.7	10.0	12.0	14.0	c	44 9.89	53 4 " "	V A 40.990	6 44 17.83	14 16 38.79	14 1597
81	8.4	38.8	40.5	42.5	44.5	46.7	a	46 11.92	53 4 " "	I A 50.470	6 46 19.86	14 19 37.11	14 1613
82	7.9	34.0	36.0	37.9	39.8	42.0	a	49 7.20	52 44 5.0 28.1	IV 42.910	6 49 15.20	13 54 3.02	13 1712
83	8.0	3.2	5.5	7.3	8.9	11.0	e	49 37.82	52 56 5.0 29.2	VII 45.860	6 49 45.79	14 7 2.81	14 1633
84	7.6	30.0	32.3	34.1	35.9	37.9	e	50 4.69	52 56 " "	VII B 39.250	6 50 12.67	14 1 44.76	13 1722
85	7.9	35.5	37.0	39.0	41.0	43.4	a	53 8.57	53 38 5.0 27.8	I 44.240	6 53 16.44	14 48 30.20	14 1662
86	8.3	14.0	16.0	18.3	20.5	22.7	c	53 18.31	53 38 " "	V 45.760	6 53 26.18	14 49 2.66	14 1663
87	7.8	17.3	19.3	21.6	23.7	25.7	c	54 21.53	53 38 " "	III 47.315	6 54 29.40	14 49 31.18	14 1669
88	7.6	7.4	9.5	11.9	14.0	16.0	c	55 11.77	53 38 " "	V A 48.130	6 55 19.63	−14 53 1.76	−14 1675
89	8.0	49.8	51.8	54.0	56.0	58.3	c	56 53.99	53 44 5.0 28.4	V 44.130	6 57 1.85	−14 54 34.09	−14 1687
90	7.8	47.9	50.0	52.0	54.0	55.7	e	57 22.45	53 44 " "	VII 46.830	6 57 30.31	14 55 27.18	14 1688
91	8.4	28.7	30.4	32.3	34.3	36.6	a	0 1.79	53 14 5.0 28.1	I 47.170	7 0 9.72	14 25 28.57	14 1704
92	7.9	40.9	42.8	44.7	46.7	48.8	a	1 14.17	53 40 5.0 27.8	III 45.610	7 1 22.05	14 51 2.39	14 1711
93	8.1	45.5	47.1	49.1	51.0	53.2	a	4 18.56	53 40 " "	I B 45.300	7 4 26.45	14 47 43.99	14 1732
94	7.8	37.8	40.0	42.3	44.5	46.5	c	4 42.23	53 40 " "	III 48.330	7 4 50.11	14 51 55.96	14 1735
95	8.0	32.5	34.7	36.5	38.2	40.3	e	5 6.98	53 40 " "	......	7 5 14.86	14 52 53	14 1739
96	7.9	50.5	52.4	54.7	56.8	58.9	c	6 54.67	53 40 " "	III (45).440	7 7 2.56	14 51 2.06	14 1760
97	9.0	40.3	42.4	44.1	46.0	48.0	e	8 14.76	53 16 5.0 28.8	VII 42.520	7 8 22.70	14 26 9.59	14 1772
98	......	12.0	14.0	16.2	18.5	20.5	c	8 16.25	53 16 " "	......	7 8 24.20	−14 27 6	−14 1773
99	7.9	39.8	41.9	44.0	46.0	48.3	c	9 44.01	53 16 " "	V B 43.540	7 9 51.96	−14 23 15.90	−14 1784
100	8.0	53.3	55.4	57.6	59.8	2.0	c	11 57.63	53 44 5.0 28.1	V 43.460	7 12 5.52	14 54 28.90	14 1805
101	8.1	56.3	58.3	0.8	2.6	4.8	c	14 0.57	52 54 5.0 28.6	III 41.290	7 14 8.57	14 3 44.85	13 1935
102	8.3	9.7	11.4	13.3	15.3	17.5	a	15 42.80	53 30 5.0 28.8	I 45.030	7 15 50.72	14 40 56.92	14 1840
103	8.1	50.7	52.8	54.9	56.9	59.3	c	15 54.93	53 30 " "	V 45.330	7 16 2.85	14 41 6.17	14 1843
104	8.0	43.4	45.7	47.6	49.6	51.4	e	17 18.11	53 26 5.0 26.1	VII 45.210	7 17 26.04	14 37 4.49	14 1862
105	8.1	27.4	29.6	31.8	34.0	36.0	c	18 31.77	53 26 " "	V A 48.130	7 18 39.70	14 41 12.23	14 1872
106	7.7	49.8	52.3	54.0	55.9	58.0	e	20 24.56	53 26 " "	VII A 48.020	7 20 32.49	14 41 12.39	14 1887
107	......	1.2	3.6	5.4	7.3	9.3	e	25 35.91	53 36	......	7 25 43.85	14 47 22	14 1932
108	8.1	52.6	54.5	56.4	58.4	0.4	a	28 25.85	53 46 5.0 28.7	I 47.370	7 28 33.77	−14 57 48.52	−14 1964
109	8.4	16.2	17.8	19.7	21.8	24.0	a	29 49.29	53 42 5.0 28.4	III 42.190	7 29 57.23	−14 52 12.08	−14 1977
110	8.1	14.0	15.8	17.8	19.9	22.0	a	31 47.23	53 16 5.0 27.9	III 43.420	7 31 55.23	14 26 34.90	14 2018
111	8.0	16.8	18.8	21.0	23.0	25.4	c	36 21.01	53 38 5.0 26.3	III 44.860	7 36 28.98	14 49 4.74	14 2099
112	8.0	54.4	56.5	0.9	2.3	5.0	c_4 d_3	37 52.33	52 52 5.0 28.4	VI 46.780	7 38 0.40	14 3 43.20	13 2182
113	7.8	0.9	2.9	5.2	7.2	9.5	c	40 5.15	53 40 5.0 27.8	III 43.610	7 40 13.12	14 50 43.59	14 2190
114	8.2	20.0	21.9	23.9	25.8	27.9	a	41 53.21	53 6 5.0 27.9	I 45.140	7 42 1.27	14 17 10.13	14 2203
115	7.9	36.5	38.7	40.8	42.9	45.0	c	42 40.79	53 10 5.0 29.6	III 47.150	7 42 48.85	14 21 51.62	14 2211
116	8.1	57.4	59.0	1.0	3.0	5.1	a	49 30.40	53 4 5.0 28.4	I 46.460	7 49 38.49	14 15 38.94	14 2268
117	8.2	14.9	17.0	19.1	21.2	23.5	c	50 19.15	53 10 5.0 27.6	V 48.000	7 50 27.23	14 22 11.95	14 2274

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
118	7.9	25.0	27.0	29.5	31.5	33.6	c	52 29.33	53 4 5.0 27.8	III 44.410	7 52 37.44	−14 15 2.78	−14 2292
119	7.9	......	56.9	58.8	0.7	2.6	e	52 29.34	53 4 5.0 27.8	VII A 49.040	7 52 37.44	14 19 46.87	14 2293
120	8.0	16.7	18.6	20.3	22.5	24.6	a	55 49.88	53 20 5.0 27.5	I 46.700	7 55 57.97	14 31 46.73	14 2319
121	7.8	17.5	19.4	21.0	23.0	25.4	a	56 50.66	53 48 5.0 27.5	III 43.150	7 56 58.70	−14 58 42.78	−14 2331

Reduction Elements. Zones 4 and 5.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
January 27.3....	+0.233	+0.066	+0.392 +0.524	+0.223	+0.044	+0.443
27.5....	+0.213	+0.023	+0.402 +0.453			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ζ Eridani		τ⁴ Eridani*		Lalande 6476		20 Eridani		γ Eridani		ε Leporis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	48 2 2.00		60 58 1.65		51 52 2.10		56 38 2.00		52 38 1.50		61 20 1.60	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.....	47.570	6 21.40		5 31.83	45.840	5 48.81	47.280	6 16.10		5 57.50		5 37.48
II Red. to Mer......	.465	1.71	44.830	1.58	.780	1.68	.250	1.63		1.67		1.58
VI Inclination......	.320		.845	2.07	.650		.060		(46).180	2.04	45.140	2.04
VII Refraction.......	.380	1 7.6	.810	1 49.3	.615	1 17.4	.030	1 32.4	.175	1 19.7	.110	1 51.4

	λ Eridani		α Leporis*		ζ Leporis		5 Monocerotis		9 Navis		ι Navis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	47 44 0.85		56 44 2.00		53 42 1.70		45 4 1.80		52 26 1.55		62 50 1.70	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.....	43.170	4 57.81		5 0.52	43.190	4 58.25	46.950	6 9.15	47.530	6 20.71	41.975	4 35.60
II Red. to Mer......	.130	1.71	43.160	1.62	.130	1.66		1.73	.470	1.67	.920	1.56
VI Inclination......	42.950		.230	2.07	.000		.750	0.54	.320		.835	
VII Refraction.......	.905	1 7.1	.155	1 33.0	42 930	1 23.1	.670	1 1.3	.270	1 19.3	.760	1 58.3

	20 Navis		Lalande 16304		Bradley 1212	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 18 1.65		51 6 2.05		46 28 2.10	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.....		5 21.40	45.740	5 45.79	42.050	4 36.15
II Red. to Mer......	44.460	1.67	.650	1.69	41.975	1.72
VI Inclination......	.240	0.82	.470		.840	
VII Refraction.......	.140	1 24.6	.390	1 15.3	.740	1 3.9

* Bisections at VI, e_5, VII.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
47 H. Cephei.........	2 52 6.94	11	−0.15	[−7.77]	319 56	....
ζ Eridani...........	3 10 48.77	11	+0.59	−7.93	48 9 32.7	42.1
τ⁴ Eridani...........	3 14 55.91	11	+0.68	−7.98	61 5 26.4	43.3
Lalande 6476......	3 24 43.45	11	+0.62	−7.99	51 59 10.0	43.4
20 Eridani......	3 31 35.49	11	+0.65	−7.95	56 45 52.1	42.9
5 H. Camelopardalis.	3 39 18.62	11	+0.08	[−8.16]	327 56	....
γ Eridani...........	3 53 12.89	11	+0.62	−7.87	52 45 22.4	43.8
ε Leporis	5 1	..	......	......	61 27 34.1	42.5
λ Eridani...........	5 4	..	......	......	47 50 7.5	43.7
Groombridge 966..	5 25 44.40	11	−0.01	[−7.78]	323 58	....
α Leporis...........	5 28 11.65	11	+0.65	−7.94	56 50 39.2	44.4
ζ Leporis...........	5 42 17.51	11	+0.63	−7.91	53 48 24.7	43.0
5 Monocerotis	6 9 49.62	11	+0.57	−7.90	45 11 14.5	43.5
9 Navis	7 47 0.31	11	+0.62	−7.80	52 33 43.2	43.8
ι Navis	8 3 10.22	11	+0.70	−7.80	62 56 37.2	43.0
Bradley 1147......	8 6 27.92	11	−0.04	[−7.84]	322 52	....
20 Navis	8 8 36.17	11	+0.63	−7.82	54 24 50.1	43.5
Lalande 16304.....	8 13 30.58	11	+0.61	−7.77	51 13 4.8	42.7
Bradley 1212......	8 30 26.40	11	+0.58	−7.82	46 33 43.9	42.5

h 5.000............*dt*...................... s −7.907

Hourly rate............ +0.0307

Adopted Equator Point............38° 56′ 43″.21

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
2 55	29.935	31.6	30.3
3 42	29.945	28.6	28.7
4 3	29.945	28.2	29.3
4 29	29.955	28.6	29.5
5 23	29.945	26.8	26.8
6 2	29.955	26.7	27.5
6 47	29.955	26.2	27.5
7 25	29.955	25.9	27.3
7 58	29.955	26.9	28.7

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0			$D=$ Z. D. S. to 1894.0			R		
			52°	53°	54°	52°	53°	54°	52°	53°	54°
°	s	h m	s	s	s	″	″	″	″	″	″
52	+0.615	3 0	+16.749	+16.637	+16.521	−2.80	−3.11	−3.42	77.42	80.24	83.21
53	0.622	3 30	16.430	16.305	16.179	1.95	2.26	2.55	77.61	80.45	83.43
54	+0.629	4 0	16.145	16.010	15.871	1.15	1.43	1.72	77.57	80.41	83.39
		4 30	15.898	15.753	15.609	−0.42	−0.68	0.95	77.55	80.39	83.37
		5 0	15.692	15.542	15.391	+0.24	0.00	−0.24	77.80	80.65	83.64
		5 30	15.532	15.379	15.226	0.81	+0.59	+0.38	77.95	80.80	83.79
		6 0	15.420	15.268	15.115	1.27	1.10	0.92	77.89	80.74	83.73
		6 30	15.359	15.210	15.059	1.64	1.50	1.36	77.89	80.74	83.73
		7 0	15.350	15.205	15.059	1.88	1.79	1.69	77.91	80.76	83.75
		7 30	15.393	15.254	15.116	2.02	1.96	1.90	77.89	80.74	83.73
		8 0	+15.487	+15.358	+15.229	+2.03	+2.02	+2.00	77.66	80.50	83.48

1894 FEBRUARY 1. ZONE 6. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°	
1	......	5.5	7.7	9.8	11.5	13.7	e	43 40.31	52 42	...	.....	....	....	3 43 52.17	−13 50 37	−13	745
2	......	2.3	4.6	6.7	8.7	10.9	c	49 6.65	53 8	5.0	3.8	V	45.530	3 49 18.41	14 17 25.55	14	772
3	6.8	3.3	5.1	7.1	9.0	11.1	a	51 36.38	52 44	5.0	4.2	I	45.320	3 51 48.18	13 53 18.46	14	783
4	9.0	10.8	12.5	14.4	16.4	18.6	a	53 44.00	54 14	5.0	4.3	I	44.480	3 53 55.58	15 23 7.50	15	693
5	8.2	30.0	32.0	34.1	36.3	38.4	c	54 34.17	54 14	"	"	III A	41.440	3 54 45.74	15 25 24.93	15	696
6	8.7	43.0	44.7	46.6	48.6	50.6	a	58 16.17	54 14	"	"	I A	40.790	3 58 27.70	15 25 12.63	15	708
7	7.8	23.6	25.3	27.2	29.3	31.4	a	0 56.80	54 4	5.0	5.1	I	46.430	4 1 8.33	15 13 47.98	15	715
8	10.0	34.7	36.4	38.2	40.1	42.4	a	3 7.79	54 0	5.0	4.8	I	43.510	4 3 19.31	15 8 53.11	15	722
9	7.8	16.0	18.0	19.9	21.7	23.9	a	4 49.31	53 54	5.0	4.3	I	45.540	4 5 0.83	15 3 32.05	15	730
10	7.4	8.8	10.8	12.7	14.6	16.9	a	5 42.21	54 8	5.0	4.9	I	45.180	4 5 53.69	−15 17 26.57	−15	733
11	8.6	13.5	15.5	17.8	20.0	22.0	c	6 17.77	53 52	5.0	4.2	V	44.620	4 6 29.28	−15 1 18.56	−15	738
12	8.4	43.7	45.5	47.5	49.5	51.5	a	9 16.99	54 8	5.0	4.0	I	43.880	4 9 28.44	15 17 3.11	15	745
13	8.9	2.0	4.0	6.0	8.2	10.3	c	10 6.11	54 16	5.0	3.6	III	43.610	4 10 17.53	15 25 0.35	15	751
14	7.9	54.7	56.7	58.9	1.0	3.1	c	11 58.89	53 56	5.0	4.0	III	47.995	4 12 10.34	15 6 24.02	15	757
15	6.7	54.0	55.9	57.7	59.7	1.9	a	13 27.24	53 44	5.0	3.8	III	43.460	4 13 38.70	14 52 57.79	14	866
16	8.0	44.1	46.1	48.3	50.3	52.6	c	14 48.29	54 16	5.0	4.3	(V)	42.270	4 14 59.67	15 24 39.13	15	765
17	7.6	28.6	30.4	32.3	34.3	36.4	a	17 1.69	52 58	5.0	4.7	III	43.795	4 17 13.22	14 7 4.34	14	885
18	7.7	37.7	39.5	41.5	43.4	45.5	a	20 10.92	53 46	5.0	4.5	I	43.570	4 20 22.32	14 55 1.84	15	780
19	9.0	59.0	0.7	2.8	4.8	7.0	a	23 32.11	52 42	5.0	4.0	I	42.050	4 23 43.63	13 50 31.54	13	888
20	8.6	8.5	10.4	12.5	14.4	16.5	a	24 41.90	54 6	5.0	3.8	I	43.380	4 24 53.22	−15 15 1.05	−15	798
21	9.0	13.7	15.6	17.7	19.4	21.7	a	25 47.07	54 10	5.0	4.3	III	41.080	4 25 58.37	−15 18 20.08	−15	800
22	7.8	4.0	6.2	8.3	10.5	12.7	c	32 8.35	53 58	5.0	3.8	(V)	45.260	4 32 19.62	15 7 43.66	15	819
23	7.8	12.9	14.8	17.0	19.1	21.3	c	34 17.03	54 4	5.0	4.9	V B	39.105	4 34 28.28	15 8 36.06	15	828
24	8.3	......	......	......	45.0	47.0	a	38 12.52	54 22	5.0	4.8	I	44.340	4 38 23.69	15 31 27.44	15	845
25	8.8	29.0	30.8	32.7	34.7	36.8	a	41 2.22	53 58	5.0	4.2	III	41.120	4 41 13.42	15 6 28.00	15	858
26	8.8	48.6	50.6	52.7	55.0	57.1	c	41 52.81	53 46	5.0	5.8	V	45.770	4 42 4.03	14 55 58.86	15	861
27	7.8	2.5	4.5	6.7	8.9	11.1	c	43 6.75	54 12	5.0	5.1	III	41.930	4 43 17.90	15 20 45.62	15	865
28	6.2	22.7	24.5	26.5	28.4	30.5	a	44 55.78	52 46	5.0	4.4	I	46.960	4 45 7.13	13 56 16.28	14	970
29	7.7	0.9	2.6	4.7	6.6	8.9	a	45 33.99	52 38	5.0	4.5	III	47.300	4 45 45.38	13 48 24.60	13	987
30	7.5	17.2	18.9	21.0	23.0	25.2	a	46 50.44	53 36	5.0	4.2	III	44.080	4 47 1.66	−14 45 26.38	−14	981
31	7.9	16.1	18.1	20.4	22.7	24.8	c	47 20.43	54 4	5.0	4.1	V	43.230	4 47 31.58	−15 13 13.33	−15	880
32	8.6	44.0	45.8	47.8	49.8	51.9	a	49 17.22	53 28	5.0	4.7	I	44.615	4 49 28.44	14 37 35.91	14	988
33	8.9	30.9	32.7	34.7	36.6	39.0	a	51 4.08	53 2	5.0	4.2	I	44.100	4 51 15.35	14 11 25.65	14	996
34	8.4	25.4	27.1	29.1	31.0	33.0	a	51 58.38	52 42	5.0	4.6	I	45.450	4 52 9.69	13 51 51.14	13	1026
35	8.2	43.0	45.0	46.9	48.7	50.6	e	52 17.51	52 38	5.0	4.5	VII	43.670	4 52 28.83	13 47 22.11	13	1029
36	8.7	2.1	4.4	6.5	8.7	10.9	c	55 6.52	54 22	5.0	5.5	V	44.430	4 55 17.57	15 31 41.80	15	917
37	8.0	7.2	9.1	11.0	12.9	15.1	a	56 40.37	53 8	5.0	3.8	I	44.110	4 56 51.59	14 17 28.85	14	1016
38	8.7	25.9	27.5	29.6	31.6	33.7	a	57 58.91	52 38	5.0	4.1	I	46.865	4 58 10.18	13 48 20.47	13	1052
39	7.8	25.3	27.3	29.3	31.4	33.5	a	58 58.74	53 36	5.0	4.0	I	47.265	4 59 9.87	14 46 31.47	14	1025
40	6.3	7.0	9.3	11.7	13.8	16.0	c	59 11.57	53 36	"	"	V B	42.260	4 59 22.71	−14 41 47.36	−14	1029
41	7.0	33.7	35.6	38.0	40.1	42.0	c	1 37.89	53 40	5.0	4.2	III	44.985	5 1 49.00	−14 49 51.58	−14	1045
42	6.5	25.9	27.8	29.9	32.1	34.4	c	3 30.03	54 4	5.0	3.9	III	43.850	5 3 41.07	15 13 31.94	15	950
43	8.0	20.1	22.4	24.5	26.6	28.7	c	4 24.47	53 42	5.0	4.0	V	43.880	5 4 35.56	14 51 33.65	14	1055
44	8.9	54.7	56.7	58.8	1.0	3.1	c	5 58.87	52 50	5.0	5.4	(V)	45.510	5 6 10.07	−14 0 3.87	−14	1064

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
45	8.9	52.8	55.0	56.8	58.7	0.7	e	29 27.27	54 12	5.0	5.2	VII	41.440	5 29 38.14	−15 21 4.08	−15 1082
46	8.9	22.8	24.9	27.0	28.7	30.8	e	33 57.51	52 40	5.0	4.0	VII	43.820	5 34 8.58	13 49 47.06	13 1201
47	9.0	27.1	29.0	31.0	33.0	35.0	e	35 1.50	54 4	5.0	4.3	VII	42.280	5 35 12.36	[15 13 22.26]	15 1111
48	8.7	36.0	38.4	40.3	42.0	44.0	e	36 10.64	53 56	5.0	4.5	VII	45.160	5 36 21.52	15 6 17.44	15 1119
49	8.7	24.0	26.0	28.1	30.3	32.5	c	44 28.19	53 50	5.0	4.2	V	41.620	5 44 39.06	14 59 12.67	15 1175
50	9.1	39.0	41.3	43.1	45.0	47.4	e	48 13.66	53 56	5.0	3.8	VII	43.590	5 48 24.49	−15 5 53.74	−15 1203
51	9.5	31.2	33.6	35.7	37.7	39.8	c	50 35.61	54 20	5.0	4.2	V	41.700	5 50 46.38	−15 29 18.93	−15 1215
52	9.0	21.1	23.2	25.2	27.1	29.2	e	50 55.61	54 20	"	"	VII	45.690	5 51 6.38	15 30 36.52	15 1216
53	7.9	42.3	44.7	46.6	48.4	50.1	e	52 17.09	52 44	5.0	4.7	VII	41.040	5 52 28.09	13 53 4.56	13 1310
54	8.1	17.7	20.0	22.2	26.3	27.8	c_3 d_2	55 17.85	52 48	5.0	4.0	VI	44.140	5 55 28.82	13 58 4.29	13 1316
55	8.5	2.3	4.7	6.6	8.4	10.5	e	55 37.15	52 48	"	"	VII A	43.930	5 55 48.12	14 1 14.06	14 1304
56	7.2	55.1	57.0	59.0	0.8	3.0	▪	59 28.26	52 54	5.0	4.8	I	46.670	5 59 39.20	14 4 51.22	14 1322
57	7.9	46.1	48.1	50.4	52.5	54.6	c	59 50.35	52 54	"	"	V B	46.390	6 0 1.30	14 1 37.14	14 1324
58	8.1	34.2	36.5	38.5	40.1	42.3	e	0 8.96	52 54	"	"	VII A	42.440	6 0 19.90	−14 6 48.80	−14 1326

1894 FEBRUARY 7. ZONE 7. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
59	7.8	54.8	57.0	59.0	0.8	2.8	e	21 29.48	53 16	5.0	3.5	VII	42.640	6 21 40.32	−14 25 51.71	−14 1442
60	8.0	58.0	59.7	1.6	3.5	5.7	a	24 31.01	53 8	5.0	4.0	III	41.680	6 24 41.86	14 17 31.86	14 1466
61	6.8	13.9	15.6	17.6	19.6	21.7	a	25 47.08	53 42	5.0	4.8	I	46.740	6 25 57.84	14 53 9.06	14 1476
62	8.1	11.6	13.5	15.8	17.9	20.0	c	26 15.77	53 14	5.0	3.6	III	46.755	6 26 26.60	14 25 9.48	14 1481
63	8.1	57.6	59.9	1.9	3.7	5.7	e	27 32.36	53 14	"	"	VII A	42.020	6 27 43.18	14 26 56.00	14 1487
64	8.1	18.0	20.3	22.1	23.9	26.0	e	30 52.55	54 0	5.0	3.8	VII	45.690	6 31 3.27	15 10 57.07	15 1444
65	7.7	34.8	36.8	38.6	40.7	42.8	a	33 8.06	53 12	5.0	4.3	I	43.660	6 33 18.90	14 22 12.73	14 1515
66	8.4	23.4	25.1	27.2	29.1	31.4	▪	34 56.56	53 12	"	"	I	42.930	6 35 7.40	14 21 59.81	14 1529
67	8.9	36.7	38.3	40.4	42.3	44.4	a	36 9.75	53 12	"	"	I A	48.000	6 36 20.57	14 26 50.18	14 1535
68	7.7	0.1	2.1	4.1	6.4	8.6	c	37 4.27	53 12	"	"	III	44.985	6 37 15.10	−14 22 41.87	−14 1542
69	7.6	11.5	13.5	15.9	18.0	20.1	c	38 15.81	54 28	5.0	5.3	III	42.930	6 38 26.46	−15 38 7.52	−15 1481
70	7.9	16.0	17.9	19.8	21.7	23.9	a	40 49.25	53 40	5.0	4.5	I	46.400	6 41 0.01	14 51 10.42	14 1569
71	8.6	1.7	3.6	5.6	7.5	9.7	a	41 35.01	53 40	"	"	I B	49.600	6 41 45.77	14 48 59.49	14 1577
72	7.8	11.8	13.9	16.0	18.4	20.4	c	42 16.11	53 48	5.0	4.9	III	46.460	6 42 26.85	14 59 14.72	14 1587
73	6.2	41.9	43.5	45.6	47.5	49.7	a	44 15.04	53 48	"	"	I A	44.760	6 44 25.77	15 1 54.83	14 1599
74	7.8	24.0	25.7	27.7	29.4	31.8	a	44 57.12	53 48	"	"	I B	45.740	6 45 7.87	14 55 48.37	14 1601
75	8.9	4.7	6.9	9.0	11.2	13.3	c	46 9.03	53 8	5.0	3.8	III	47.680	6 46 19.86	14 19 37.56	14 1613
76	7.9	26.6	28.8	30.8	33.0	35.1	c	47 30.87	53 54	5.0	4.0	V	46.470	6 47 41.59	15 5 19.17	15 1546
77	8.0	42.3	44.5	46.5	48.7	50.8	c	48 46.57	53 18	5.0	3.9	III	45.040	6 48 57.38	14 28 49.22	14 1627
78	8.6	34.4	36.5	38.6	40.8	42.9	c	50 38.65	53 (8)	5.0	4.0	III A	43.100	6 50 49.47	−14 21 25.94	−14 1640
79	8.5	28.7	31.0	32.8	34.7	36.5	e	51 3.35	53 (8)	"	"	VII A	40.670	6 51 14.18	−14 20 42.78	−14 1644
80	7.7	12.9	15.0	17.4	19.4	21.6	c	53 17.27	53 30	5.0	3.1	V	45.800	6 53 28.05	14 41 7.86	14 1664
81	8.0	22.8	24.6	29.0	30.4	33.4	c_4 d_3	54 20.54	53 10	5.0	3.9	VI	44.820	6 54 31.37	14 20 49.97	14 1670
82	8.3	26.4	28.7	30.6	32.5	34.5	e	55 1 15	53 10	"	"	VII A	45.550	6 55 11.97	14 24 17.77	14 1674
83	7.9	54.0	55.7	57.9	59.8	1.9	a	57 27.16	53 2	5.0	3.3	I	45.820	6 57 38.00	14 13 5.77	14 1689
84	7.9	29.0	30.9	33.2	35.4	37.6	c	57 33.23	53 2	"	"	V	50.230	6 57 44.07	14 14 33.20	14 1690
85	8.5	43.9	46.5	48.3	50.1	52.1	e	58 18.83	52 50	5.0	4.3	VII	46.350	6 58 29.70	14 1 21.13	13 1795
86	9.0	38.0	39.7	41.7	43.6	45.8	a	0 11.03	52 50	"	"	III	47.335	7 0 21.90	14 1 37.76	13 1807
87	8.5	48.6	50.6	52.5	54.5	56.5	a	4 21.85	53 6	5.0	3.5	III	41.880	7 4 32.69	14 15 56.43	14 1734
88	8.7	36.2	38.0	40.0	41.6	44.0	a	5 9.27	53 6	"	"	III	41.610	7 5 20.11	−14 15 51.70	−14 1741
89	8.5	20.9	23.0	25.0	27.5	29.6	c	5 25.21	53 6	"	"	VI A	48.550	7 5 36.04	−14 21 19.25	−14 1743
90	9.1	58.7	0.5	2.7	5.0	7.1	c	7 2.81	53 6	"	"	V B	39.050	7 7 13.66	14 11 53.15	14 1761
91	7.9	12.5	14.9	16.6	18.4	20.5	e	7 47.19	53 6	"	"	VII A	42.525	7 7 58.02	14 19 26.42	14 1768
92	9.0	12.8	15.0	16.9	18.8	20.8	e	9 47.53	52 48	5.0	4.3	VII	41.765	7 9 58.42	13 57 59.65	13 1895
93	7.9	15.1	17.1	19.5	21.5	23.8	c	11 19.41	52 48	"	"	III B	46.715	7 11 30.30	13 56 19.24	13 1906
94	7.7	6.3	8.4	10.5	12.6	14.6	c	12 10.49	52 48	"	"	(V) B	45.830	7 12 21.38	13 56 4.40	13 1916
95	8.1	21.1	23.4	25.2	27.0	28.8	e	12 55.74	52 56	5.0	3.9	VII	47.355	7 13 6.61	14 7 47.82	14 1814
96	7.9	47.4	49.7	51.6	53.3	55.5	e	14 22.13	52 56	"	"	V A	51.550	7 14 32.99	14 12 19.93	14 1824
97	6.0	8.0	9.9	12.1	14.3	16.4	c	16 12.15	53 0	5.0	3.4	III	43.060	7 16 23.02	14 10 24.56	14 1846
98	8.4	52.0	54.6	56.4	58.1	0.3	e	16 26.91	53 0	"	"	VII	42.620	7 16 37.78	−14 10 19.41	−14 1853
99	8.0	25.5	27.5	29.5	31.7	33.7	c	18 29.59	53 28	5.0	3.3	V A	37.940	7 18 40.39	−14 40 4.15	−14 1873
100	7.9	12.8	14.9	16.7	18.6	......	e	18 47.29	53 28	"	"	VII B	39.700	7 18 58.10	14 34 13.80	14 1874
101	8.2	47.5	49.3	51.2	53.1	55.1	a	23 20.62	53 38	5.0	3.4	I	41.670	7 23 31.42	14 48 1.68	14 1913
102	8.4	52.6	54.4	56.4	58.5	0.7	a	24 25.91	53 38	"	"	......	......	7 24 36.71	14 49 44	14 1923
103	6.8	33.9	35.8	38.0	40.1	42.4	c	24 38.05	53 38	"	"	V	38.520	7 24 48.86	14 47 5.80	14 1925
104	7.0	1.5	3.4	5.3	7.1	9.4	a	26 34.71	53 38	"	"	I B	42.950	7 26 45.52	14 45 15.39	14 1944
105	8.8	4.6	6.1	8.0	10.0	12.2	a	27 37.56	53 38	"	"	I B	45.980	7 27 48.37	14 46 13.58	14 1953
106	8.9	42.4	44.7	46.6	48.5	50.4	e	28 17.06	53 38	"	"	VII	48.390	7 28 27.87	14 50 17.44	14 1962
107	......	9.8	12.1	14.0	15.8	17.8	e	31 44.51	53(16)	5.0	3.5	VII	43.040	7 31 55.37	14 26 35.78	14 2018
108	8.1	25.3	27.0	28.9	30.9	33.0	a	38 58.28	52 46	5.0	4.3	III	46.165	7 39 9.22	−13 57 34.65	−13 2194
109	8.2	1.3	3.1	5.0	6.9	8.9	a	40 34.32	52 54	5.0	4.1	I	46.800	7 40 45.25	−14 5 45.97	−13 2207

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
110	8.5	6.5	8.3	10.1	11.9	14.3	a	42 39.56	53 20	5.0	3.3	I	47.975	7 42 50.44	−14 32 10.17	−14 2212
111	8.7	55.1	57.0	59.3	3.4	5.0	c_3 d_2	48 54.99	53 34	5.0	3.7	VI B	44.670	7 49 5.87	14 42 2.87	14 2263
112	8.4	29.1	31.4	33.3	35.2	37.1	e	54 3.80	53 24	5.0	2.8	V	42.450	7 54 14.72	14 34 33.73	14 2310
113	8.2	49.3	51.3	53.5	55.6	57.7	c	55 53.49	53 12	5.0	3.4	V	44.990	7 56 4.44	14 23 22.64	14 2320
114	......	12.8	14.9	17.0	19.1	21.3	c	57 17.03	53 26	5.0	2.3	III	41.710	7 57 27.96	14 36 19.35	14 2335
115	8.6	37.6	39.5	41.5	43.4	45.6	a	59 10.87	53 26	"	"	III	44.850	7 59 21.80	14 37 20.01	14 2351
116	8.7	34.1	35.9	38.0	39.9	42.0	a	0 7.40	53 56	5.0	3.0	III	41.800	8 0 18.27	15 6 24.21	14 2359
117	8.9	58.1	0.3	2.6	4.5	6.8	c	1 2.47	53 56	"	"	V B	47.100	8 1 13.35	15 4 54.76	14 2366
118	8.8	17.8	20.1	22.0	23.6	25.7	e	1 52.42	53 24	5.0	3.1	VII	42.480	8 2 3.37	−14 34 39.52	−14 2372
119	7.2	15.9	18.0	20.0	22.1	24.2	c	4 20.05	53 8	5.0	4.0	V	38.370	8 4 31.04	−14 17 20.60	−14 2393
120	8.0	37.3	39.3	41.1	43.0	45.0	e	5 11.75	53 8	"	"	VII	44.160	8 5 22.74	14 19 12.64	14 2398
121	8.6	0.1	2.0	4.4	6.3	8.5	c	7 4.27	53 8	"	"	III A	43.060	8 7 15.26	14 22 2.60	14 2406
122	8.0	54.0	56.1	58.4	0.3	2.7	c	7 58.31	53 8	"	"	....	....	8 8 9.32	14 16 37	14 2420
123	9.0	33.5	36.0	38.0	39.7	41.8	e	8 8.41	53 8	"	"	VII	46.610	8 8 19.41	14 20 0.60	14 2421
124	8.4	17.4	19.7	21.6	23.5	25.5	a	11 50.39	53 28	5.0	4.5	III	41.740	8 12 1.87	14 38 27.70	14 2452
125	8.3	29.1	31.3	33.2	35.1	36.0	e	12 3.71	53 28	"	"	VII	41.670	8 12 14.69	14 38 29.54	14 2457
126	7.7	41.0	42.6	44.6	46.6	48.8	a	15 14.03	53 6	5.0	2.8	III	46.410	8 15 25.08	14 17 56.16	14 2474
127	7.3	55.0	57.3	59.6	3.7	5.3	c_3 d_2	15 55.23	52 52	5.0	3.6	VI	42.780	8 16 6.31	14 2 49.45	13 2491
128	8.5	49.1	51.2	53.3	55.5	57.6	c	16 53.35	52 52	"	"	V A	46.060	8 17 4.43	−14 7 4.55	−13 2500
129	8.0	22.4	24.7	26.6	28.5	30.4	e	16 57.16	52 52	"	"	VII A	45.540	8 17 8.24	−14 6 56.00	−13 2501
130	9.3	14.7	17.0	19.0	21.0	22.6	e	18 49.50	52 52	"	"	VII A	46.760	8 19 0.58	14 7 20.03	13 2514
131	......	1.8	3.8	5.9	8.0	10.1	c	21 5.93	53 26	5.0	2.4	V	40.860	8 21 16.97	14 36 15.45	14 2517
132	6.8	32.7	34.8	36.9	39.1	41.4	c	22 36.99	53 26	"	"	III	41.130	8 22 48.04	14 36 19.59	14 2526
133	8.2	56.0	58.1	0.4	2.5	4.7	c	32 0.35	53 56	5.0	3.5	VI	45.200	8 32 11.40	15 7 45.43	14 2589
134	7.6	26.3	28.5	30.6	32.8	34.9	c	33 30.63	53 44	5.0	3.2	III	44.550	8 33 41.71	14 55 30.56	14 2594
135	7.8	31.2	33.0	35.0	36.9	39.0	a	38 4.37	53 26	5.0	2.6	I	46.210	8 38 15.50	14 38 0.98	14 2629
136	8.2	13.8	15.9	18.0	20.1	22.3	c	38 18.03	53 26	"	"	V	46.640	8 38 29.17	14 38 12.71	14 2630
137	7.8	26.7	29.0	31.0	32.7	34.7	e	39 1.38	53 26	"	"	VII A	(48).930	8 39 12.51	−14 42 10.93	−14 2631

Reduction Elements. Zones 6 and 7.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
February 1.3....	+0.270	−0.033	+0.416	+0.202	−0.078	+0.406
1.5....	+0.134	−0.124	+0.355			
			+0.448			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		Lalande 6476		ε Eridani		20 Eridani		τ⁶ Eridani		30 Eridani		β Leporis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		51 52 4.05		48 40 4.60		56 38 5.20		62 24 4.55		44 30 4.50		59 40 4.60	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	45.640	5 45.15	41.650	4 27.64	46.910	6 9.90	41.785	4 31.27	47.205	6 14.83	44.940	5 33.19
II	Red. to Mer......	.590	1.68		1.69	.900	1.63	.720	1.57	.180	1.74	.860	1.59
VI	Inclination	.490		.360	0.54	.740		.550		.020			−2.04
VII	Refraction	.395	1 16.8	.350	1 8.5	.770	1 31.5	.520	1 54.9	46.950	59.2		1 43.1

		α Leporis		γ Leporis		κ Orionis		δ Leporis		5 Monocerotis		26 Monocerotis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		56 44 5.45		61 18 4.60		48 32 4.60		59 42 5.10		45 4 4.90		48 8 4.35	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	43.050	4 55.58	45.600	5 44.21	46.040	5 52.06	46.930	6 8.87	46.670	6 3.87	45.340	5 39.29
II	Red. to Mer......	42.970	1.63	.550	1.58	45.960	1.70	.820	1.59	.580	1.74	.280	1.71
VI	Inclination	.860		.400		.820		.720		.430		.185	
VII	Refraction	.810	1 31.9	.365	1 50.2	.750	1 8.4	.630	1 43.4	.370	1 0.7	.075	1 8.0

		9 Navis		*e* Navis		Bradley 1212		δ Hydrae		Lalande 17333	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		52 26 4.05		61 26 4.75		46 28 4.15		50 56 4.55		57 12 4.45	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	47.225	6 15.11		4 30.25	41.830	4 33.06	44.390*	5 21.42	43.800	5 8.96
II	Red. to Mer......	.170	1.67	41.710	1.60	.820	1.72	.340	1.69	.685	1.63
VI	Inclination	.060		.540	0.82	.680		.215	0.08	.540	
VII	Refraction	46.960	1 19.2	.520	1 51.7	.620	1 4.2	.180	1 15.2	.480	1 34.6

* Bisection at a_1.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 6476	3 24 40.41	11	+0.49	−4.89	51 59 7.7	40.7
ε Eridani	3 28 0.88	11	+0.46	−4.77	48 45 43.0	39.5
20 Eridani	3 31 32.55	11	+0.52	−4.95	56 45 48.2	38.6
5 H. Camelopardalis	3 39 15.44	11	−0.24	[−4.91]	327 56	....
τ^{6} Eridani	3 42 22.17	11	+0.57	−4.91	62 30 32.3	40.1
30 Eridani	3 47 32.39	11	+0.43	−4.87	44 37 20.3	39.6
β Leporis	5 23 47.63	5	+0.55	−4.95	59 47 20.4	39.2
α Leporis	5 28 8.67	11	+0.52	−4.88	56 50 34.6	39.1
γ Leporis	5 40 8.01	11	+0.56	−4.82	61 25 40.6	39.1
κ Orionis	5 42 49.15	11	+0.46	−4.83	48 39 6.8	40.6
δ Leporis	5 46 51.23	11	+0.55	−4.91	59 49 59.0	39.6
δ Ursæ Minoris S. P.	6 6 14.10	5	+2.94	[−5.52]	305 34	....
5 Monocerotis	6 9 46.53	11	+0.44	−4.70	45 11 11.2	39.5
26 Monocerotis	7 36 16.66	11	+0.46	−4.84	48 14 53.4	39.7
9 Navis	7 46 57.50	11	+0.49	−4.85	52 33 40.0	39.6
c Navis	7 52 23.66	11	+0.57	−4.80	61 32 29.1	39.0
Groombridge 1446	8 28 6.56	13	−0.35	[−4.94]	324 56	....
Bradley 1212	8 30 23.59	11	+0.45	−4.84	46 33 43.1	40.7
6 Hydrae	8 35 5.84	11	+0.48	−4.83	51 2 42.9	40.7
Lalande 17333	8 42 1.25	11	+0.53	−4.80	57 18 49.6	39.3

h 3.582	*dt*	s −4.878
	Hourly rate	+0.0114
	Adopted Equator Point	° ′ ″ 38 56 39.68

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 36	29.925	36.5	33.2
4 8	29.865	34.0	32.5
4 25	29.865	34.0	32.5
5 58	29.915	32.4	31.3
7 0	29.935	31.8	28.6
7 46	29.945	29.8	28.3
8 42	29.945	28.4	27.5

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0				$D=$ Z. D. S. to 1894.0				*R*			
			52°	53°	54°	55°	52°	53°	54°	55°	52°	53°	54°	55°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
52	+0.486	3 30	+16.497	+16.372	+16.246	+16.119	−2.35	−2.65	−2.96	−3.25	76.86	79.67	82.62	85.70
53	0.494	4 0	16.207	16.074	15.935	15.799	1.65	1.94	2.23	2.52	76.84	79.65	82.60	85.68
54	0.501	4 30	15.954	15.812	15.668	15.523	1.00	1.27	1.54	1.82	76.84	79.65	82.60	85.68
55	+0.509	5 0	15.742	15.593	15.444	15.293	−0.44	0.70	0.94	1.20	76.95	79.76	82.72	85.80
		5 30	15.573	15.421	15.269	15.115	+0.04	−0.18	−0.41	0.63	77.05	79.87	82.83	85.92
		6 0	15.451	15.300	15.147	14.993	0.43	+0.23	+0.04	−0.15	77.16	79.98	82.95	86.04
		6 30	15.380	15.230	15.080	14.927	0.72	0.55	0.39	+0.24	77.39	80.22	83.20	86.30
		7 0	15.356	15.212	15.066	14.918	0.89	0.76	0.64	0.52	77.62	80.46	83.44	86.56
		7 30	15.384	15.247	15.108	14.967	0.96	0.88	0.80	0.72	77.68	80.52	83.50	86.62
		8 0	15.462	15.335	15.206	15.075	0.92	0.88	0.84	0.80	77.75	80.59	83.58	86.70
		8 30	15.589	15.474	15.358	15.237	0.77	0.77	0.78	0.78	77.82	80.67	83.66	86.78
		9 0	+15.762	+15.662	+15.557	+15.453	+0.51	+0.56	+0.61	+0.66	77.91	80.76	83.75	86.88

1894 FEBRUARY 5. ZONE 8. CLAMP EAST.

SKINNER, OBSERVER.

LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	7.7	3.0	5.1	7.3	9.5	11.7	c	50 7.33	54 4 5.0	5.7	III	40.620	3 50 21.81	−15 11 57.15	−15 687
2	8.1	23.0	25.0	27.1	29.2	31.3	c	59 27.13	53 24 5.0	6.2	V	41.350	3 59 41.61	14 32 15.50	14 812
3	8.7	50.6	52.3	54.2	56.0	58.3	a	5 23.71	54 0 5.0	6.7	I	44.720	4 5 38.05	15 9 20.96	15 732
4	7.8	10.1	12.4	14.5	16.6	18.8	c	11 14.49	54 2 5.0	5.7	III	42.340	4 11 28.79	15 10 39.90	15 754
5	9.2	17.5	19.3	21.1	23.2	25.5	a	13 50.71	53 38 5.0	5.7	I	44.710	4 14 5.04	14 47 23.34	14 867
6	......	51.8	53.9	56.3	58.2	0.4	c	13 56.13	53 38 “	“	V B	41.920	4 14 10.46	14 43 21.35	14 869
7	9.0	35.0	37.1	39.2	41.3	43.4	c	16 39.21	54 10 5.0	5.6	V	46.290	4 16 53.44	15 19 59.72	15 769
8	8.1	42.7	44.5	46.3	48.2	50.5	a	23 15.93	54 24 5.0	6.8	I	47.000	4 23 30.07	15 34 14.29	15 793
9	7.6	57.7	59.9	4.1	6.2	10.5	c_1 d_1	24 2.00	54 2 5.0	6.6	III	46.240	4 24 16.18	15 12 0.89	15 796
10	8.5	33.9	35.7	37.5	39.6	41.7	a	32 7.10	53 56 5.0	5.2	I	43.310	4 32 21.24	−15 5 6.39	−15 820
11	9.0	39.8	42.3	44.0	46.0	47.9	e	32 14.48	54 4 6.0	6.5	VII	42.710	4 32 28.60	−15 13 1.44	−15 822
12	7.8	43.5	45.6	47.4	49.1	51.2	e	34 17.82	54 16 6.0	7.8	VII	41.680	4 34 31.90	15 24 44.11	15 830
13	7.7	36.4	38.0	40.0	42.0	44.1	a	38 9.58	54 22 5.0	7.0	I	44.160	4 38 23.61	15 31 27.75	15 845
14	7.6	20.4	22.4	24.2	26.1	28.4	a	43 53.77	54 14 5.0	5.4	I	46.430	4 44 7.77	15 24 12.73	15 867
15	8.6	30.1	32.0	33.8	35.8	37.9	a	46 3.37	54 8 5.0	6.7	I	46.020	4 46 17.37	15 18 6.41	15 875
16	8.0	33.0	35.0	37.1	39.2	41.4	c	47 37.15	53 54 5.0	6.7	III	45.083	4 47 51.18	15 3 50.53	15 883
17	8.2	51.2	53.0	55.0	57.0	59.2	a	49 24.50	53 54 “	“	I A	42.990	4 49 38.51	15 6 23.02	15 893
18	7.7	38.1	40.0	41.9	43.8	45.9	a	51 11.35	53 54 “	“	I	39.500	4 51 25.36	15 2 4.28	15 903
19	7.4	36.1	38.1	40.3	42.5	44.8	c	51 40.37	54 22 5.0	7.2	III	46.490	4 51 54.30	15 32 21.00	15 904
20	8.3	......	15.7	17.4	19.4	21.5	e	52 48.06	53 26 5.0	6.5	VII	43.250	4 53 2.12	−14 35 19.99	−14 1002

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
21	7.9	52.9	54.5	56.3	58.4	0.6	a	53 25.89	53 26 5.0 6.5	I 46.730	4 53 39.94	−14 36 21.66	−14 1005
22	9.2	39.0	40.9	42.8	44.8	47.0	a	57 12.36	54 14 5.0 6.7	I (42).210	4 57 26.27	15 22 59.95	15 925
23	7.7	35.3	37.3	39.1	41.2	43.4	a	58 8.62	53 26 5.0 6.3	I 48.370	4 58 22.63	14 36 55.24	14 1022
24	6.0	59.9	2.0	4.1	6.3	8.4	c	59 4.15	53 26 " "	III B 38.620	4 59 18.17	14 30 39.62	14 1027
25	7.2	45.5	47.7	50.0	52.0	54.1	c	59 49.87	53 56 5.0 5.6	V 42.550	5 0 3.80	15 5 9.83	15 938
26	7.8	20.2	22.0	24.0	26.0	28.0	a	3 53.54	54 28 5.0 6.1	III 42.490	5 4 7.37	15 37 10.97	15 952
27	7.9	34.0	36.4	38.2	40.0	42.0	e	5 8.65	53 46 5.0 6.3	VII 47.110	5 5 22.58	14 56 40.76	15 956
28	7.7	6.6	8.7	10.8	13.0	15.1	c	7 10.85	53 2 5.0 6.4	III 46.020	5 7 24.87	14 12 16.02	14 1067
29	7.6	1.6	3.6	5.9	8.0	10.1	c	8 5.85	53 30 5.0 6.3	V 49.070	5 8 19.80	14 41 17.42	14 1070
30	6.5	12.9	14.9	17.2	21.3	23.0	c_3 d_2	9 12.89	53 34 5.0 5.8	V 43.110	5 9 26.83	−14 43 24.49	−14 1074
31	8.0	46.6	48.8	50.7	52.6	54.6	e	10 21.14	54 2 5.0 5.8	V 47.535	5 10 35.00	−15 12 50.65	−15 984
32	7.7	6.1	8.0	9.9	11.9	14.0	a	14 39.38	53 42 5.0 5.6	I 46.080	5 14 53.26	14 52 20.74	14 1094
33	7.9	12.0	13.7	15.7	17.6	19.9	a	15 45.15	53 32 5.0 6.3	I 43.450	5 15 59.05	14 41 31.16	14 1099
34	7.5	6.0	8.1	10.4	12.6	14.7	c	16 10.37	53 32 " "	V A 40.375	5 16 24.26	14 43 49.26	14 1102
35	6.8	0.1	2.4	4.3	6.1	8.3	e	16 34.80	53 32 " "	VII 36.090	5 16 48.70	14 39 16.38	14 1105
36	7.8	33.0	35.2	37.1	39.0	41.0	e	18 7.56	53 58 5.0 7.2	VII 41.170	5 18 21.39	15 6 55.56	15 1022
37	7.4	40.6	42.3	44.3	46.4	48.4	a	20 13.72	53 12 5.0 6.7	III 44.055	5 20 27.64	14 21 46.11	14 1124
38	7.3	42.8	45.0	47.2	51.3	52.9	c_3 d_2	20 42.88	53 4 5.0 6.5	VI (40).100	5 20 56.82	14 12 33.01	14 1126
39	8.0	4.7	6.6	8.5	10.5	12.6	a	24 38.03	54 8 5.0 5.0	III 46.905	5 24 51.80	15 18 44.49	15 1053
40	9.5	18.8	20.8	23.0	25.0	27.4	c	26 23.01	54 14 5.0 5.0	V 46.230	5 26 36.76	−15 24 34.50	−15 1064
41	8.4	5.0	7.4	9.2	11.1	13.0	e	27 39.65	53 56 5.0 6.3	V B 43.910	5 27 53.44	−15 2 38.41	−15 1075
42	7.9	47.0	48.8	50.8	52.6	54.9	a	30 20.26	54 2 5.0 5.6	I 45.910	5 30 34.02	15 12 26.78	15 1085
43	8.5	4.8	7.0	9.2	11.5	13.5	c	31 9.21	54 16 5.0 6.4	III 41.620	5 31 22.93	15 25 8.46	15 1090
44	7.7	45.0	47.4	49.2	51.1	53.3	e	31 19.66	54 16 " "	VII 46.290	5 31 33.38	15 26 40.54	15 1092
45	8.3	31.4	33.5	35.4	37.3	39.4	e	32 5.90	53 56 5.0 6.7	VII 43.740	5 32 19.66	15 5 51.60	15 1098
46	9.4	43.1	45.3	47.1	49.0	50.9	e	33 17.60	53 56 " "	VII B 36.001	5 33 31.37	15 0 12.47	15 1104
47	7.6	54.7	56.5	58.5	0.6	2.7	a	35 28.02	53 56 " "	III 44.550	5 35 41.77	15 6 5.74	15 1116
48	8.0	14.1	16.0	17.9	20.0	22.0	a	37 47.42	53 56 " "	I A 40.620	5 38 1.15	15 8 3.60	15 1133
49	9.0	28.1	29.8	31.9	33.9	36.1	a	39 1.48	54 36 5.0 6.2	III 40.720	5 39 15.12	15 44 56.45	15 1136
50	7.5	20.0	22.1	24.1	28.5	30.0	c_3 d_2	39 19.98	53 24 5.0 6.3	VI 41.970	5 39 33.80	−14 33 19.39	−14 1224
51	7.8	47.2	49.2	51.5	53.6	55.7	c	40 51.45	53 56 5.0 5.4	V 41.880	5 41 5.18	−15 5 18.79	−15 1152
52	8.1	20.6	22.8	24.7	26.5	28.6	e	40 55.14	53 56 " "	VII A 38.780	5 41 8.87	15 7 34.13	15 1153
53	8.2	18.5	20.8	22.8	24.7	26.6	e	41 53.18	53 56 " "	VII B 38.430	5 42 6.92	15 1 2.67	15 1162
54	8.0	38.9	40.7	42.6	44.5	46.7	a	45 12.04	53 28 4.2 5.2	I 44.180	5 45 25.82	14 37 59.64	14 1252
55	8.4	33.0	35.0	37.1	39.3	41.5	c	45 37.19	53 28 " "	III 48.660	5 45 50.96	14 39 26.97	14 1255
56	7.5	13.1	14.7	16.8	18.6	20.8	a	47 46.15	53 28 " "	I B 44.290	5 47 59.93	14 34 50.87	14 1267
57	7.9	19.1	21.0	23.0	25.0	27.1	a	48 52.52	54 20 5.0 6.7	I 40.850	5 49 6.16	15 29 1.89	15 1208
58	8.0	28.7	30.4	32.2	34.5	36.6	a	51 1.91	54 2 5.0 6.2	I 44.090	5 51 15.58	15 12 3.58	15 1217
59	7.8	16.0	18.3	20.4	22.6	24.7	c	51 20.41	54 16 5.0 6.5	III 44.275	5 51 34.05	15 26 9.92	15 1220
60	7.0	22.1	24.0	26.0	28.0	30.2	a	52 55.53	54 16 " "	I 40.760	5 53 9.17	−15 25 2.06	−15 1226
61	8.0	56.3	58.5	0.4	2.2	4.2	e	53 30.78	54 16 " "	VII 45.370	5 53 44.41	−15 26 35.01	−15 1230
62	8.0	27.2	29.5	31.6	33.8	35.9	c	53 31.61	54 16 " "	III 43.190	5 53 45.24	15 25 50.45	15 1231
63	7.8	43.6	45.9	47.9	49.7	51.7	e	55 18.27	53 54 5.0 6.7	VII 44.400	5 55 31.95	15 4 16.61	15 1239
64	7.5	28.3	30.6	32.2	34.0	36.1	e	56 2.76	53 54 " "	VII B 42.270	5 56 16.44	15 0 23.94	15 1242
65	9.0	41.7	43.4	45.6	47.6	49.7	a	59 14.99	53 38 5.0 6.4	I 47.960	5 59 28.70	14 49 20.63	14 1321
66	7.8	47.1	48.9	50.8	52.7	54.9	a	0 20.35	54 14 5.0 6.4	I 47.130	6 0 33.97	15 25 7.18	15 1265
67	7.7	18.8	20.6	22.7	24.6	26.7	a	1 52.10	53 58 5.0 6.1	I 41.450	6 2 5.76	15 7 18.94	15 1269
68	7.6	10.2	12.1	14.1	15.9	18.0	a	2 43.50	54 4 5.0 6.0	I (46).640	6 2 57.14	15 14 58.43	15 1272
69	8.1	1.3	3.4	5.6	7.6	9.8	c	3 5.55	54 0 5.0 5.4	V 47.030	6 3 19.19	15 11 9.00	15 1274
70	7.9	42.9	45.0	47.1	51.4	52.9	c_3 d_2	4 42.88	53 56 5.0 6.2	VI 42.740	6 4 56.53	−15 5 49.15	−15 1285
71	7.7	57.6	59.6	1.7	3.8	5.9	c	7 1.73	54 22 5.0 6.8	III 42.510	6 7 15.31	−15 31 45.22	−15 1304
72	8.7	35.8	37.6	39.7	41.5	43.8	a	15 9.16	54 20 5.0 6.6	III 44.890	6 15 22.73	15 30 34.67	15 1347
73	7.4	59.4	1.3	3.0	4.9	7.2	a	16 32.43	52 50 5.0 6.8	I 43.370	6 16 46.22	14 0 0.49	13 1457
74	7.8	14.7	16.3	18.1	20.1	22.4	a	20 47.60	52 54 5.0 6.5	I 43.910	6 21 1.36	14 4 13.07	14 1440
75	8.1	51.0	52.7	54.7	56.8	59.0	a	21 24.25	53 54 5.0 5.8	III 42.145	6 21 37.87	15 3 44.10	15 1381
76	7.6	53.5	55.3	57.3	59.3	1.5	a	22 26.79	53 54 " "	III 43.420	6 22 40.41	15 4 8.93	15 1387
77	7.3	17.7	20.0	21.9	23.7	25.8	e	22 52.30	54 4 5.0 5.8	VII 44.910	6 23 5.89	15 14 41.08	15 1390
78	8.0	33.9	35.8	37.6	39.6	41.8	a	25 7.16	53 56 5.0 5.6	I 45.520	6 25 20.77	−15 6 48.50	−15 1403

1894 FEBRUARY 5. ZONE 9. CLAMP EAST.

SKINNER, OBSERVER.

LITTELL, ASSISTANT.

79	7.7	33.1	34.8	36.7	38.7	40.8	a	41 6.15	53 12 5.0 6.0	I 46.900	6 41 19.84	−14 23 21.32	−14 1572
80	7.0	12.6	14.5	16.5	18.3	20.5	a	41 45.81	53 12 " "	I A 42.080	6 41 59.50	14 25 3.12	14 1579
81	6.5	59.6	1.6	3.9	5.9	8.0	c	42 3.81	53 12 " "	III B 43.580	6 42 17.51	14 19 8.10	14 1584
82	7.8	......	......	......	......	......	....	....	54 2 5.0 5.9	I 45.890	6 43 51	15 13 5.75	15 1519[1]
83	7.6	5.1	6.9	8.9	10.8	12.9	a	45 38.19	52 50 5.0 7.2	I 42.050	6 45 51.94	13 59 50.92	13 1682
84	7.9	19.9	21.9	24.0	26.2	28.4	c	47 24.09	53 58 5.0 6.3	V 45.790	6 47 37.67	15 9 9.28	15 1545
85	8.2	26.8	28.7	30.9	33.0	35.0	c	48 30.89	54 10 5.0 6.0	V 45.115	6 48 44.44	15 20 57.45	15 1550
86	7.6	34.0	36.1	38.1	40.3	42.6	c	49 38.23	53 8 5.0 6.2	V 47.080	6 49 51.93	14 19 32.52	14 1635
87	6.5	13.7	15.9	18.0	20.1	22.1	c	51 17.97	52 44 5.0 5.3	III 44.980	6 51 31.73	13 54 50.18	13 1741
88	8.0	3.0	5.0	7.1	9.3	11.5	c	55 7.19	53 56 5.0 6.7	V 42.170	6 55 20.79	−15 6 4.44	−15 1594

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
89	7.6	3.1	5.5	7.2	9.2	11.0	e	55 37.70	53 56	5.0	6.7	VII	45.435	6 55 51.30	−15 7 8.32	−15 1597
90	8.1	28.5	30.5	32.7	34.9	37.0	c	57 32.73	53 56	"	"	III	44.940	6 57 46.32	15 6 56.79	15 1610
91	8.0	1.0	2.8	4.7	6.6	9.0	a	58 34.24	53 56	"	"	III	43.700	6 58 47.84	15 6 33.72	15 1620
92	7.8	27.8	30.0	31.9	33.8	35.7	e	59 2.34	53 56	"	"	VII	49.150	6 59 15.93	15 8 20.80	15 1626
93	8.0	21.1	23.3	25.4	27.5	29.7	c	0 25.41	52 44	5.4	7.3	V	41.730	7 0 39.17	13 53 55.83	13 1809
94	7.9	0.7	2.8	4.8	7.0	9.0	c	2 4.87	53 22	5.0	7.2	V	43.690	7 2 18.54	14 32 34.54	14 1717
95	7.8	16.4	18.5	20.7	22.5	24.5	e	2 51.02	53 56	5.0	8.0	VII	43.330	7 3 4.62	15 6 32.61	15 1654
96	......	45.2	47.5	49.6	51.7	53.9	c	4 49.59	53 54	5.0	6.7	V	44.570	7 5 3.19	15 4 55.02	15 1671
97	8.2	35.8	38.0	40.1	42.4	44.4	c	6 40.15	52 52	5.0	8.4	III A	39.500	7 6 53.89	14 4 28.76	14 1759
98	7.7	9.6	11.6	13.8	16.0	18.0	c	8 13.81	53 32	5.0	8.1	III	44.430	7 8 27.47	−14 42 52.10	−14 1774
99	7.9	......	39.0	40.9	42.8	44.8	e	9 11.31	54 16	5.0	7.6	VII	42.440	7 9 24.88	−15 26 19.69	−15 1709
100	8.2	53.6	55.8	57.6	59.7	1.8	a	11 27.06	53 30	5.0	7.2	I	44.240	7 11 40.73	[14 40 47.74]	14 1798
101	8.0	39.1	41.3	43.4	45.5	47.7	c	11 43.41	53 30	"	"	V	47.690	7 11 57.08	[14 41 57.00]	14 1803
102	......	25.3	27.5	29.3	31.1	33.1	e	11 59.82	53 30	"	"	VII B	43.690	7 12 13.49	14 40 42.44	....
103	7.8	24.4	26.5	28.5	30.4	32.3	e	12 58.98	53 30	"	"	VII	42.880	7 13 12.65	14 40 27.51	14 1817
104	7.8	24.1	26.7	28.5	30.4	32.3	e	14 58.91	53 54	5.0	7.2	(VII)	43.010	7 15 12.53	15 4 32.16	14 1834
105	8.0	39.1	41.1	43.2	45.1	47.0	e	16 13.70	53 16	5.0	8.1	VII	45.920	7 16 27.40	14 27 26.79	14 1849
106	7.7	0.3	2.1	4.0	6.0	8.1	a	19 33.37	52 50	5.0	7.9	I	43.440	7 19 47.14	14 0 35.04	13 1990
107	8.0	56.3	58.3	0.6	2.7	4.7	c	20 0.53	52 50	"	"	III B	37.560	7 20 14.31	13 55 32.81	13 1996
108	7.0	2.1	4.2	6.4	8.6	10.7	c	21 6.41	52 50	"	"	III	37.660	7 21 20.18	−13 58 47.56	−13 2008
109	7.9	38.8	41.0	42.8	44.6	46.6	e	21 13.42	52 50	"	"	VII B	38.410	7 21 27.20	−13 55 52.53	−13 2009
110	8.6	5.8	8.0	9.9	11.8	13.7	e	21 40.50	52 50	"	"	VII B	42.640	7 21 54.28	13 57 13.26	13 2012
111	7.7	25.7	27.9	30.1	32.1	34.4	c	25 30.05	53 36	5.0	7.2	V	45.450	7 25 43.73	14 47 21.54	14 1932
112	8.3	10.7	13.0	15.0	16.6	18.6	e	25 45.33	53 36	"	"	VII	40.528	7 25 59.02	14 45 49.41	14 1935
113	8.1	52.1	54.5	56.2	58.3	0.1	e	27 26.78	53 36	"	"	VII A	46.560	7 27 40.46	14 50 57.91	14 1952
114	8.0	18.7	20.9	22.8	24.7	26.7	e	28 53.29	53 46	5.0	7.8	VII	42.290	7 29 6.96	14 56 25.29	14 1970
115	7.3	1.7	4.0	5.8	7.7	9.7	e	30 36.30	53 58	5.0	7.4	V	(46).400	7 30 49.94	15 9 43.31	15 1914
116	8.0	7.9	10.1	12.0	14.0	15.9	e	31 42.63	52 50	5.0	7.7	VII	44.740	7 31 56.42	14 1 10.52	13 2119
117	8.0	31.0	33.1	35.1	37.4	39.5	c	34 35.23	53 52	5.0	7.6	III	45.830	7 34 48.89	15 3 32.55	14 2073
118	6.0	31.0	33.0	35.2	37.4	39.6	c	35 35.25	53 52	"	"	V	40.520	7 35 48.92	−15 1 53.57	−14 2082
119	8.5	18.5	20.9	22.7	24.7	26.7	e	35 53.22	53 52	"	"	VII	(43).510	7 36 6.89	−15 2 52.09	−14 2086
120	8.1	3.1	5.2	7.4	9.6	11.6	c	38 7.39	53 34	5.0	7.1	III	46.600	7 38 21.10	14 45 47.76	14 2171
121	7.0	34.8	36.8	38.9	40.9	43.4	c	40 38.97	53 16	5.0	8.2	V	42.600	7 40 52.73	14 26 34.16	14 2193
122	7.0	4.8	7.0	9.0	10.8	12.9	e	40 39.50	53 16	"	"	VII	43.380	7 40 53.26	14.26 50.46	14 2194
123	8.3	48.1	50.2	52.3	54.6	56.8	c	42 52.41	53 56	5.0	7.3	III	42.730	7 43 6.10	15 6 37.56	15 2050
124	8.4	11.5	13.8	15.9	17.7	19.7	e	43 46.20	54 8	5.0	7.9	VII	44.170	7 43 59.87	15 19 9.39	15 2059
125	7.9	15.5	17.5	19.6	21.8	24.0	c	46 19.69	53 48	5.0	8.0	III	45.540	7 46 33.40	14 59 32.62	14 2240
126	8.5	34.3	36.6	38.5	40.4	42.3	e	47 8.93	53 48	"	"	VII A	50.860	7 47 22.64	15 4 30.24	14 2247
127	8.9	25.8	27.9	29.9	34.1	35.9	c_3 d_2	49 25.74	54 12	5.0	7.7	VI	42.770	7 49 39.41	15 22 44.80	15 2119
128	8.0	0.9	3.4	5.1	7.0	8.9	e	50 35.66	53 16	5.0	7.3	V	45.280	7 50 49.45	−14 27 29.38	−14 2275
129	8.5	47.3	49.4	51.5	53.7	55.9	c	52 51.57	53 4	5.0	7.4	III	45.150	7 53 5.40	−14 15 25.79	−14 2299
130	8.0	19.8	22.1	23.9	25.9	27.8	e	52 54.51	53 4	"	"	VII A	50.260	7 53 8.32	14 20 19.04	14 2301
131	8.9	34.4	36.7	38.6	40.1	42.3	e	56 9.06	52 52	5.0	7.6	VII	46.010	7 56 22.92	14 3 46.27	13 2344
132	8.3	41.3	43.4	45.7	49.9	51.3	c_3 d_2	57 41.34	53 54	5.0	7.1	V	42.890	7 57 55.08	15 4 48.93	14 2340
133	8.2	......	16.4	18.3	20.0	22.1	e	57 48.68	53 54	"	"	VII A	(48).850	7 58 2.41	15 9 56.77	15 2211
134	7.9	......	9.0	10.9	12.9	14.8	e	58 41.39	53 54	"	"	VII	41.100	7 58 55.14	15 4 16.79	14 2348
135	9.0	24.5	26.9	28.7	30.7	32.5	e	59 59.18	53 54	"	"	VII B	40.620	8 0 12.94	15 0 55.76	14 2357
136	7.8	21.7	24.1	26.0	27.9	29.8	e	3 56.36	54 12	5.0	7.2	V	46.400	8 4 10.10	15 23 59.57	15 2271
137	8.0	37.7	39.6	41.5	43.4	45.8	a	6 10.87	52 52	5.0	7.8	I	43.160	8 6 24.78	14 2 51.76	13 2421
138	7.8	23.9	26.0	28.2	30.3	32.4	c	6 28.17	52 52	"	"	VII	48.115	8 6 42.08	−14 4 31.09	−13 2426
139	7.7	48.8	50.7	52.4	54.4	56.7	a	11 22.06	54 12	8.7	10.2	I	42.280	8 11 35.83	−15 22 44.31	−15 2351
140	7.6	56.5	58.6	0.9	3.0	5.1	c	12 0.83	53 40	5.0	6.0	V	42.030	8 12 14.67	14 50 37.71	14 2456
141	7.5	5.3	7.3	9.5	11.6	13.7	c	13 9.49	53 28	5.0	6.4	V	45.790	8 13 23.35	14 39 49.39	14 2460
142	8.1	44.6	46.9	48.8	50.7	52.7	e	14 19.32	53 22	5.0	6.3	VII	44.640	8 14 33.20	14 33 29.11	14 2471
143	7.9	39.6	42.0	43.8	45.8	47.6	e	15 14.34	53 22	"	"	VII	48.840	8 15 28.22	14 34 49.46	14 2475
144	8.0	32.0	34.0	36.1	38.3	40.4	c	16 36.17	53 22	"	"	V B	41.250	8 16 50.07	14 29 11.60	14 2485
145	8.1	34.0	36.3	38.3	40.1	42.0	e	17 8.59	54 22	5.0	7.8	VII	41.840	8 17 22.37	15 32 40.82	15 2397
146	7.7	13.3	15.3	17.2	19.3	21.5	a	19 46.73	53 56	5.0	6.8	III	46.610	8 20 0.58	15 8 7.81	14 2504
147	7.6	32.1	34.5	36.5	38.3	40.1	e	20 6.83	53 46	5.0	7.1	VII	46.700	8 20 20.70	14 58 12.41	14 2510
148	7.7	9.9	12.0	14.2	16.1	18.3	c	22 14.11	54 8	5.0	7.1	V	42.335	8 22 27.95	−15 18 49.89	−15 2441
149	8.6	15.5	17.2	19.1	21.0	23.0	a	24 48.45	53 0	5.0	7.1	I	44.040	8 25 2.43	−14 11 16.57	−14 2542
150	7.9	43.5	45.9	47.7	49.5	51.7	e	32 18.08	54 28	5.0	6.8	VII	46.560	8 32 31.94	−15 40 16.84	−15 2520

Reduction Elements. Zones 8 and 9.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
February 5.3....	+0.223	+0.067	+0.512	+0.207	+0.060	+0.565
5.5....	+0.191	+0.053	+0.577			
			+0.606			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	τ^6 Eridani		30 Eridani		γ Eridani		Lalande 7685		o^1 Eridani		*A* Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	62 24 5.45		44 30 5.70		52 38 5.90		57 10 6.60		45 58 5.70		49 22 5.70	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	41.555	4 27.00	47.080	6 12.42	45.890	5 49.73	43.700	5 8.00	41.070	4 18.23	41.820	4 31.81
II Red. to Mer......	.530	1.57	.050	1.74	.840	1.67	.645	1.63	.070	1.73	.750	1.70
VI Inclination......	.320		46.880		.730		.480		40.890		.590	
VII Refraction.......	.275	1 58.1	.840	1 0.9	.615	1 21.0	.475	1 35.8	.800	1 4.0	.530	1 12.1

	5 Monocerotis		6 Monocerotis		β Canis Majoris		ξ^2 Canis Majoris		20 Navis*		Bradley 1212	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	45 4 5.55		49 32 5.70		56 44 5.70		61 42 6.10		54 18 9.45		46 28 5.60	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.580	6 2.32	41.570	4 28.15	43.890	5 11.56	44.820	5 29.38		5 7.85	41.690	4 29.58
II Red. to Mer......	.490	1.74	.580	1.70	.840	1.63	.760	1.57	43.600	1.65	.650	1.72
VI Inclination......	.335		.400		.700		.630		.575	2.07	.480	
VII Refraction.......	.320	1 2.1	.370	1 12.6	.620	1 34.3	.585	1 54.9	.525	1 26.4	.400	1 5.3

	6 Hydrae		Lalande 17333		15 Hydrae	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	50 56 6.10		57 12 6.10		45 36 5.15	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......		5 15.85	43.590	5 6.00	47.380	6 17.70
II Red. to Mer......		1.69	.560	1.63	.320	1.73
VI Inclination......	44.070	2.04	.380		.170	
VII Refraction.......	43.905	1 16.5	.350	1 36.2	.090	1 3.4

* Bisections at VI, e_5, VII.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
5 H. Camelopardalis.	3 39 12.38	11	−0.13	[−2.17]	327 56	....
τ^6 Eridani	3 42 19.33	11	+0.80	−2.37	62 30 32.1	39.6
30 Eridani	3 47 29.54	11	+0.65	−2.29	44 37 20.8	40.0
γ Eridani	3 53 7.17	11	+0.71	2.37	52 45 18.3	39.0
Lalande 7685......	4 1 53.97	11	+0.75	−2.27	57 16 52.0	38.4
o^1 Eridani	4 6 43.63	11	+0.66	−2.29	46 3 29.7	38.6
A Eridani	4 9 23.24	11	+0.69	−2.23	49 27 51.3	39.1
5 Monocerotis......	6 9 43.77	11	+0.65	−2.17	45 11 11.7	39.7
6 Monocerotis......	6 12 38.85	11	+0.69	−2.27	49 37 48.2	38.0
β Canis Majoris.....	6 18 4.60	11	+0.75	−2.31	56 50 53.2	39.6
23 H. Camelopardalis.	6 28 17.99	8	−0.65	[−2.30]	319 16	....
ξ^2 Canis Majoris.....	6 30 39.49	11	+0.80	−2.25	61 49 31.9	38.5
20 Navis	8 8 30.43	11	+0.73	−2.16	54 24 47.4	38.9
Groombridge 1446.	8 28 3.79	12	−0.25	[−2.25]	324 56	....
Bradley 1212......	8 30 20.74	11	+0.66	−2.18	46 33 42.2	39.2
6 Hydrae...........	8 35 2.94	11	+0.70	−2.12	51 2 42.2	39.3
Lalande 17333	8 41 58.37	11	+0.75	−2.11	57 18 49.9	38.8
15 Hydrae...........	8 46 24.80	11	+0.66	−2.17	45 43 28.0	39.0

h 3.948............*dt*...................... s −2.303

Hourly rate .... +0.0340

Adopted Equator Point............° ′ ″ 38 56 39.05

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 55	30.125	26.0	23.9
4 35	30.115	24.8	23.7
5 22	30.095	23.4	23.7
6 51	30.085	24.5	22.5
7 56	30.085	23.8	21.5
8 45	30.085	23.8	21.8

Notes.
7. Probably clouds.
30 Eridani. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0				$D=$ Z. D. S. to 1894.0				R			
			52°	53°	54°	55°	52°	53°	54°	55°	52°	53°	54°	55°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
52	+0.708	3 30	+16.546	+16.422	+16.297	+16.170	−2.44	−2.74	−3.05	−3.35	78.90	81.79	84.82	87.98
53	0.715	4 0	16.256	16.122	15.986	15.850	1.78	2.08	2.36	2.66	78.92	81.81	84.84	88.00
54	0.724	4 30	16.001	15.858	15.716	15.571	1.21	1.50	1.77	2.05	78.94	81.83	84.86	88.02
55	+0.732	5 0	15.784	15.636	15.486	15.338	0.71	0.96	1.23	1.49	78.92	81.81	84.84	88.00
		5 30	15.609	15.458	15.307	15.154	−0.30	0.54	0.77	1.00	78.92	81.81	84.84	88.00
		6 0	15.480	15.329	15.178	15.023	+0.02	−0.19	0.40	0.60	79.00	81.88	84.92	88.08
		6 30	15.400	15.251	15.101	14.948	0.24	+0.07	−0.11	0.29	79.05	81.94	84.98	88.15
		7 0	15.368	15.224	15.078	14.930	0.35	0.21	+0.07	−0.07	79.05	81.94	84.98	88.15
		7 30	15.385	15.247	15.109	14.971	0.36	0.26	0.16	+0.06	79.14	82.04	85.07	88.25
		8 0	15.452	15.326	15.196	15.067	0.24	0.19	0.13	+0.07	79.21	82.11	85.15	88.33
		8 30	15.567	15.452	15.335	15.217	+0.04	+0.03	+0.01	−0.01	79.20	82.09	85.13	88.31
		9 0	+15.727	+15.626	+15.523	+15.420	−0.27	−0.25	−0.22	−0.19	79.16	82.05	85.09	88.27

1894 FEBRUARY 10. ZONE 10. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.0	31.2	33.5	35.4	37.2	39.1	e	12 5.70	54 30 5.0 3.6	VII	45.000	4 12 22.79	—15 39 28.51	—15 759
2	8.9	2.0	4.1	6.0	7.9	9.9	e	13 36.39	54 38 5.0 2.7	VII	40.800	4 13 53.47	15 46 9.23	15 761
3	7.0	50.7	52.8	55.0	57.1	59.3	c	45 54.99	54 38 5.0 2.2	V B	43.995	4 46 11.80	15 44 12.31	15 874
4	8.0	58.1	0.0	1.9	3.8	6.0	a	50 31.44	54 22 5.0 2.4	I	43.490	4 50 48.25	15 31 13.41	15 897
5	8.6	50.0	52.0	54.3	56.3	58.4	c	50 54.21	54 22 " "	III A	42.890	4 51 11.01	15 34 17.07	15 899
6	6.8	20.0	21.8	23.8	25.7	28.0	a	52 53.19	53 14 5.0 2.1	I	43.490	4 53 10.14	14 23 11.54	14 1003
7	7.9	46.8	48.5	50.6	52.5	54.6	a	53 19.93	53 14 " "	III	44.060	4 53 36.87	14 23 24.43	14 1004
8	7.0	41.5	43.7	46.0	48.2	50.4	c	53 45.97	53 46 5.0 2.9	V	46.530	4 54 2.83	14 56 15.07	15 910
9	8.5	33.4	35.7	37.5	39.4	41.3	e	54 7.99	53 46 " "	VII	46.100	4 54 24.85	14 56 8.53	15 912
10	......	11.8	13.9	15.8	17.6	19.7	e	54 46.28	53 46 " "	VII	50.020	4 55 3.13	—14 57 23.47	—15 915
11	9.0	20.7	22.6	24.5	26.4	28.6	a	57 54.06	54 28 5.0 2.0	I	44.770	4 58 10.87	—15 37 41.71	—15 928
12	8.0	41.1	43.0	44.9	46.9	49.0	a	59 14.25	52 46 5.0 2.5	I (A)	42.830	4 59 31.21	13 58 14.51	14 1030
13	7.8	24.9	27.0	29.3	31.4	33.5	c	59 29.23	52 46 " "	V B	39.420	4 59 46.20	13 50 47.58	13 1058
14	7.7	58.5	0.4	2.6	4.8	6.8	c	1 2.63	52 54 5.0 3.1	V	42.755	5 1 19.58	14 3 4.88	14 1040
15	7.8	10.8	12.5	14.6	16.4	18.6	a	2 43.87	52 54 " "	I A	45.640	5 3 0.80	14 7 10.46	14 1051
16	8.1	33.6	35.6	37.8	39.9	42.0	c	6 37.79	54 2 5.0 1.8	V	41.250	5 6 54.54	15 10 41.47	15 965
17	8.3	10.4	12.0	13.9	15.9	17.9	a	8 43.26	52 38 5.0 2.8	I	41.560	5 9 0.19	13 46 41.94	13 1094
18	7.9	9.8	11.6	13.6	15.4	17.7	a	9 42.90	52 52 5.0 1.8	I	46.850	5 9 59.79	14 2 23.24	14 1076
19	9.0	56.6	58.3	0.1	2.1	4.4	a	11 29.55	52 40 5.0 2.7	I	44.350	5 11 46.46	13 49 36.54	13 1110
20	8.3	3.3	5.4	7.7	9.9	12.0	c	12 7.67	53 52 5.0 2.8	V	47.030	5 12 24.40	—15 2 34.46	—15 995
21	8.3	37.8	40.0	41.7	43.5	45.8	e	12 12.28	53 52 " "	VII	51.130	5 12 29.01	—15 3 54.00	—15 996
22	8.1	12.7	14.9	16.7	18.6	20.7	e	13 47.38	52 44 5.0 2.5	V	46.140	5 14 4.26	13 54 15.35	13 1121
23	6.0	34.4	36.5	38.8	41.1	43.0	c	18 38.77	52 46 5.0 3.1	V A	51.680	5 18 55.61	14 1 16.69	14 1119
24	8.5	43.8	46.4	48.0	49.9	51.9	e	19 18.65	52 46 " "	V	53.890	5 19 35.49	[13 58 46.15]	14 1121
25	8.0	0.2	2.4	4.3	6.1	8.1	e	21 34.85	52 56 5.0 2.5	VII A	41.590	5 21 51.65	14 8 7.69	14 1133
26	8.4	4.7	6.9	8.7	10.6	12.7	e	22 39.38	52 42 5.0 2.4	VII	46.630	5 22 56.22	[13 52 30.69]	13 1157
27	9.1	19.9	22.0	24.1	26.0	28.0	c	25 24.01	54 18 5.0 1.8	V	41.510	5 25 40.62	15 26 57.12	15 1058
28	9.2	11.4	13.8	15.5	17.1	19.5	e	25 45.92	54 18 " "	V B	40.570	5 26 2.53	15 23 27.04	15 1060
29	8.4	18.3	20.8	22.5	24.2	26.4	e	26 52.92	54 6 5.0 2.5	VII	46.930	5 27 9.54	15 16 42.34	15 1068
30	9.2	56.1	58.2	0.2	2.0	4.2	e	27 30.61	54 6 " "	VII A	46.710	5 27 47.22	—15 19 51.35	—15 1073
31	8.1	24.9	26.7	28.5	30.6	32.7	a	32 58.11	54 0 5.0 2.1	I	43.200	5 33 14.72	—15 9 29.25	—15 1101
32	7.9	15.2	17.0	19.0	21.1	23.1	a	34 48.62	54 46 5.0 2.2	I	42.700	5 35 5.11	15 55 22.86	15 1110
33	8.8	9.0	11.1	13.3	15.5	17.7	c	36 13.33	54 16 5.0 2.3	III	44.540	5 36 29.88	15 25 59.13	15 1121
34	7.0	43.8	46.0	48.1	50.3	52.5	c	36 48.15	54 16 " "	V B	45.905	5 37 4.70	15 23 14.66	15 1125
35	8.5	29.6	31.5	33.5	35.3	37.5	a	39 2.95	54 16 " "	I	47.260	5 39 19.48	15 26 50.61	15 1138
36	8.5	55.3	57.1	59.0	1.0	3.2	a	39 28.58	54 16 " "	III B	46.860	5 39 45.12	15 23 32.73	15 1142
37	8.0	10.0	11.9	14.0	16.2	18.3	c	40 14.09	54 6 5.0 1.3	V	47.440	5 40 30.64	15 16 57.16	15 1148
38	8.6	47.8	50.1	52.0	54.0	56.0	e	40 22.47	54 6 " "	VII B	42.110	5 40 39.03	15 12 4.78	15 1149
39	8.6	......	11.4	13.2	15.1	17.2	e	40 43.69	54 6 " "	VII	46.350	5 41 0.24	15 16 38.14	15 1151
40	8.4	57.1	59.5	1.3	3.1	5.2	e	42 31.71	54 6 " "	VII A	42.230	5 42 48.25	—15 18 33.56	—15 1166
41	7.7	11.0	12.8	14.8	16.6	19.0	a	46 44.09	52 40 5.0 1.3	I	43.950	5 47 0.83	—13 49 47.05	—13 1281
42	8.1	45.6	47.7	50.0	52.0	54.2	c	46 49.91	52 40 " "	V A	51.460	5 47 6.63	13 55 26.44	13 1282
43	8.8	2.0	4.2	6.2	8.5	10.6	c	53 6.31	54 24 5.0 2.5	V	45.600	5 53 22.77	15 34 30.48	15 1228
44	8.6	15.0	16.8	18.8	20.8	22.8	a	54 48.30	54 12 5.0 2.2	I	43.750	5 55 4.78	15 21 52.05	15 1236
45	8.0	51.9	53.7	55.7	57.6	59.8	a	55 25.03	53 0 5.0 1.5	III	47.075	5 55 41.68	14 10 53.93	14 1302
46	8.9	5.0	7.0	9.3	11.5	13.4	c	56 9.25	54 26 5.0 2.9	V A	39.220	5 56 25.69	15 37 43.97	15 1244
47	8.1	8.2	10.8	12.4	14.4	16.5	e	56 42.90	54 26 " "	VII B	42.680	5 56 59.35	15 32 26.14	15 1248
48	8.7	2.9	4.6	6.4	8.4	10.6	a	59 35.97	53 38 5.0 1.7	III	47.590	5 59 52.51	14 49 7.77	14 1323
49	7.6	2.4	4.4	6.6	8.6	10.8	c	15 6.57	52 46 5.0 1.7	III	46.910	6 15 23.20	—13 57 0.86	—13 1450

1894 FEBRUARY 10. ZONE 11. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
50	7.8	33.7	35.8	37.8	39.6	41.6	e	26 8.26	53 32 5.0 2.0	VII B	49.100	6 26 24.75	—14 40 41.22	—14 1480
51	7.9	33.1	35.5	37.9	39.9	42.0	c	27 37.69	53 32 " "	III A	45.950	6 27 54.17	14 46 4.52	14 1489
52	7.5	24.9	27.0	29.1	31.3	33.5	c	28 29.17	53 32 " "	III	50.530	6 28 45.65	14 44 19.05	14 1490
53	8.0	34.7	36.6	38.6	40.5	42.7	a	30 8.06	54 4 5.0 1.7	I	46.510	6 30 24.46	15 15 2.90	15 1438
54	8.5	43.1	45.1	47.0	49.0	51.1	a	33 16.33	52 50 5.0 1.7	I	45.520	6 33 32.91	14 0 42.42	13 1580
55	6.5	52.7	54.5	56.6	58.3	0.6	a	34 25.82	52 50 " "	I A	43.815	6 34 42.40	14 3 23.79	14 1525
56	9.2	5.7	7.6	9.9	12.0	14.0	c	35 9.85	52 50 " "	III (B)	47.540	6 35 26.43	13 58 11.38	13 1597
57	......	6.2	8.1	10.3	12.3	14.5	c	41 10.29	53 30 5.0 1.1	V	47.240	6 41 26.76	—14 41 24.21	—14 1573

Reduction Elements. Zones 10 and 11.

1894.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
February 10.3....	+0.341	−0.059	+0.458	+0.308	−0.074	+0.466
10.5....	+0.275	−0.089	+0.466			
			+0.474			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	γ Eridani		*o*¹ Eridani		*A* Eridani		Lalande 8205		*η* Leporis		5 Monocerotis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	52 38 3.95		45 56 4.05		49 22 4.10		59 44 3.90		53 2 3.40		45 4 3.60	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.... ..	46.320	5 57.85	47.710	6 24.17	42.130	4 37.94	41.855	4 32.27	41.730	4 31.34	46.880	6 8.23
II Red. to Mer.	.245	1.67	.640	1.73	.080	1.70	.770	1.59	.690	1.67	.820	1.74
VI Inclination	.130		.530		41.910		.580		.610		.670	
VII Refraction	.090	1 16.0	.440	1 0.0	.860	1 7.6	.580	1 39.3	.560	1 17.4	.600	58.6

	6 Monocerotis		*β* Canis Majoris		26 Monocerotis		Piazzi IX. 13		*θ* Pyxidis Nautilis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	49 32 3.70		56 44 3.70		48 8 3.55		58 8 4.15		64 20 3.70	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.... ..	41.910	4 34.23	44.270	5 18.40	45.590	5 44.27	46.095	5 53.71		5 23.30
II Red. to Mer......	.930	1.70	.180	1.63	.585	1.71	.050	1.62	44.485	1.58
VI Inclination	.710		.020		.410		45.900		.345	0.82
VII Refraction	.650	1 8.4	.020	1 28.9	.345	1 5.4	.870	1 34.7	.310	2 2.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Eridani...........	3 53 4.38	11	+0.65	+0.41	52 45 19.5	40.0
Groombridge 750..	4 3 22.76	7	−0.98	[+0.61]	313 40	....
*o*¹ Eridani...........	4 6 40.74	11	+0.60	+0.58	46 3 30.0	38.7
A Eridani...........	4 9 20.43	11	+0.62	+0.55	49 27 51.3	38.7
Lalande 8205......	4 16 0.80	11	+0.72	+0.63	59 50 17.1	39.6
η Leporis...........	5 51 34.36	11	+0.66	+0.56	53 7 53.8	38.5
δ Ursæ Minoris S. P..	6 6 11.18	6	+1.93	[+0.60]	305 34	....
5 Monocerotis	6 9 40.94	11	+0.59	+0.65	45 11 12.2	39.7
6 Monocerotis	6 12 35.97	11	+0.63	+0.60	49 37 48.0	37.3
β Canis Majoris	6 18 1.73	11	+0.69	+0.57	56 50 52.6	38.3
26 Monocerotis	7 36 11.05	11	+0.61	+0.59	48 14 54.9	40.0
Groombridge 1374.	7 47 35.49	11	−0.08	[+0.48]	324 44	....
Piazzi IX. 13......	9 7 7.39	11	+0.70	+0.71	58 15 34.2	40.8
θ Pyxidis Nautilis...	9 16 47.96	11	+0.77	+0.64	64 27 31.7	38.5
d Ursæ Majoris	9 25 11.34	11	+0.01	[+0.68]	328 38	....

h		s
4.105............	*dt*....................	+0.542
	Hourly rate.............	+0.0258

Adopted Equator Point.........38° 56′ 39.″10

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 55	29.765	47.8	49.2
4 30	29.765	47.4	48.2
5 30	29.785	46.8	47.2
6 25	29.815	45.7	46.2
7 7	29.805	44.0	45.1
9 10	29.845	43.3	42.7

Notes.
2, 53, 57. Clouds.
10. Orange red.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0				*D* = Z. D. S. to 1894.0.				*R*			
			52°	53°	54°	55°	52°	53°	54°	55°	52°	53°	54°	55°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
52	+0.646	4 0	+16.354	+16.220	+16.083	+15.949	−2.10	−2.39	−2.70	−2.99	73.98	76.68	79.52	82.49
53	0.656	4 30	16.095	15.952	15.811	15.666	1.58	1.86	2.15	2.43	74.10	76.81	79.65	82.62
54	0.665	5 0	15.874	15.727	15.578	15.427	1.14	1.41	1.68	1.94	74.20	76.91	79.76	82.74
55	+0.674	5 30	15.693	15.542	15.391	15.238	0.80	1.05	1.29	1.54	74.30	77.02	79.87	82.85
		6 0	15.555	15.405	15.253	15.100	0.54	0.77	0.99	1.21	74.42	77.14	80.00	82.98
		6 30	15.463	15.316	15.166	15.014	0.38	0.58	0.78	0.97	74.54	77.27	80.13	83.12
		7 0	+15.420	+15.277	+15.132	+14.986	−0.33	−0.50	−0.65	−0.81	74.64	77.38	80.24	83.23

1894 FEBRUARY 13. ZONE 12. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.0	50.6	52.3	54.3	56.2	58.4	a	20 23.92	54 56 5.0 4.7	I 43.800	4 20 42.89	−16 5 9.62	−16 852
2	7.7	41.2	42.9	44.8	46.9	49.0	a	23 14.43	54 14	....	4 23 33.47	15 24 12	15 794
3	8.6	11.6	13.4	15.4	17.2	19.5	a	24 44.99	55 0 5.0 5.1	I 44.350	4 25 3.91	16 9 22.63	16 870
4	8.5	13.4	15.2	17.0	19.0	21.2	a	25 46.72	55 0 " "	I B 45.625	4 26 5.64	16 6 35.16	16 876
5	8.3	15.0	17.0	19.0	21.0	23.2	a	26 48.56	54 42 5.0 4.8	I 43.605	4 27 7.50	15 51 8.47	15 804
6	7.8	33.8	35.6	37.5	39.4	41.6	a	28 7.13	54 50 5.0 4.4	I 42.380	4 28 26.04	15 58 45.99	16 890
7	8.4	43.0	44.7	46.7	48.7	51.0	a	29 16.39	54 58 5.0 3.7	III 44.980	4 29 35.28	16 7 37.92	16 894
8	8.3	44.3	46.0	47.9	49.9	52.0	a	39 17.61	55 6 5.0 4.4	I 42.540	4 39 36.40	16 14 55.45	16 933
9	7.2	10.5	12.3	14.3	16.3	18.4	a	39 43.95	55 6 " "	III 42.890	4 40 2.74	16 15 4.16	16 937
10	8.1	41.0	42.8	44.7	46.5	48.9	a	41 14.44	55 34 5.0 4.5	I B 49.160	4 41 33.16	−16 41 51.67	−16 944
11	8.4	46.0	48.2	50.3	52.5	54.6	c	41 50.33	55 34 " "	III 49.170	4 42 9.03	−16 45 5.24	−16 945
12	......	10.4	12.0	14.0	16.0	18.3	a	43 43.76	55 20 5.0 4.5	I 47.070	4 44 2.48	16 30 24.71	16 956
13	8.5	18.4	20.6	22.7	24.9	27.0	c	47 22.73	55 32 5.0 5.2	III 46.570	4 47 41.39	16 42 19.84	16 980
14	8.9	50.2	52.0	54.0	56.0	58.0	a	49 23.61	55 2 5.0 4.8	I 42.230	4 49 42.34	16 10 54.76	16 986
15	8.1	5.6	7.5	9.4	11.3	13.4	a	50 39.00	54(52) 5.0 4.0	I 47.900	4 50 57.74	16 2 42.46	16 993
16	8.5	13.0	15.0	17.0	19.3	21.6	c	51 17.19	54(52) " "	III 50.525	4 51 35.92	[16 3 34.58]	16 996
17	9.3	31.4	33.4	35.6	37.7	......	c	52 35.61	54(52) " "	III 42.290	4 52 54.34	[16 0 58.49]	16 1000
18	8.0	59.0	1.0	3.2	5.4	7.6	c	59 3.25	53 30 5.0 3.8	III 47.430	4 59 22.12	14 40 35.76	14 1028
19	8.3	56.7	58.8	0.9	5.2	6.8	c_3 d_2	59 56.72	53 6 5.0 3.4	VII 41.710	5 0 15.64	14 14 49.17	14 1033
20	7.7	14.0	16.0	18.2	22.3	24.0	c_3 d_2	1 13.95	52 38 5.0 4.3	VI 42.700	5 1 32.93	−13 47 7.22	−13 1062
21	7.8	2.8	4.5	6.4	8.3	10.5	a	6 35.93	54 6 5.0 3.9	I B (38).800	5 6 54.68	−15 10 43.09	−15 965
22	8.4	52.0	54.0	56.0	57.9	0.2	a	7 25.46	54 6 " "	III B 41.200	5 7 44.21	15 11 30.96	15 968
23	7.9	52.4	54.5	56.7	58.9	0.9	c	7 56.69	54 6 " "	V B 46.370	5 8 15.43	15 13 11.20	15 972
24	8.5	8.5	10.3	12.7	14.7	16.9	c	9 12.63	54 6 " "	III (B) 36.280	5 9 31.37	15 9 58.25	15 976
25	7.8	17.3	19.3	21.6	23.8	26.0	c	10 21.61	54 6 " "	III A 47.520	5 10 40.32	15 19 58.22	15 986
26	8.2	21.5	23.4	25.4	27.2	29.5	a	11 54.84	54 6 " "	I B 43.040	5 12 13.56	15 12 6.62	15 993
27	8.1	39.7	41.7	44.0	46.0	48.1	c	12 43.91	54 6 " "	III A 45.760	5 13 2.60	15 19 25.98	15 1000
28	7.5	10.8	13.0	14.9	16.7	18.9	e	12 45.33	54 6 " "	VII A 46.330	5 13 4.02	15 19 39.69	15 1001
29	7.2	24.0	26.0	27.8	29.8	32.2	a	16 57.22	52 46 5.0 3.4	I B 40.340	5 17 16.09	13 51 14.05	13 1135
30	8.0	55.7	57.8	59.9	2.1	4.0	c	16 59.91	52 46 " "	V A 43.000	5 17 18.77	−13 58 33.35	−14 1107
31	7.6	47.0	49.3	51.5	53.6	55.6	c	20 51.41	52 56 5.0 4.6	III ( ) 48.540	5 21 10.23	−14 7 7.29	−14 1130
32	7.7	24.0	26.4	28.3	30.5	32.6	c	21 28.37	52 56 " "	V B 40.940	5 21 47.19	14 1 32.23	14 1132
33	9.5	53.8	55.7	58.0	0.2	2.2	c	23 57.99	54 8 5.0 4.0	V 45.540	5 24 16.62	15 18 16.43	15 1052
34	7.8	17.3	19.0	21.0	23.3	25.2	a	26 50.60	54 8 " "	I 40.590	5 27 9.22	15 16 40.34	15 1068
35	8.2	55.4	57.0	59.0	1.0	3.0	a	27 28.53	54 8 " "	I (A) 40.380	5 27 47.14	15 19 49.89	15 1073
36	8.4	50.4	52.5	54.8	56.8	59.0	c	27 54.71	54 8 " "	III 42.820	5 28 13.33	15 17 25.16	15 1079
37	7.9	25.5	28.0	29.9	31.6	33.7	e	28 0.41	52 42 5.0 3.9	VII 42.240	5 28 19.23	13 51 13.30	13 1180
38	8.0	49.8	51.5	53.4	55.6	57.7	a	31 23.11	54 32 5.0 3.9	III 48.700	5 31 41.65	15 43 20.03	15 1093
39	8.3	1.6	3.7	5.9	8.3	10.4	c	32 5.99	54 32 " "	III B 50.710	5 32 24.53	[15 40 46.33]	15 1099
40	7.7	50.8	52.7	54.6	56.5	58.7	a	34 24.23	54 58 5.0 4.5	I 46.060	5 34 42.69	−16 8 31.13	−16 1194
41	8.7	0.5	2.0	4.0	6.0	8.1	a	35 33.69	54 58 " "	I 47.800	5 35 52.14	−16 9 4.88	−16 1200
42	8.0	51.0	53.2	55.3	57.6	59.6	c	35 55.35	54 58 " "	III A 45.230	5 36 13.79	16 11 31.07	16 1202
43	8.5	5.7	7.7	9.8	12.0	14.1	c	37 9.87	54 26 5.0 4.3	III 45.780	5 37 28.39	15 36 27.44	15 1127
44	8.8	32.4	34.2	36.2	38.2	40.3	a	39 5.79	54 42 5.0 4.3	I 42.290	5 39 24.26	15 51 21.00	15 1139
45	7.7	20.8	22.7	24.8	26.6	28.7	a	40 54.26	54 42 " "	I A 41.980	5 41 12.72	15 54 29.28	15 1154
46	8.1	38.1	40.0	42.0	43.9	46.0	a	42 11.34	53 20 5.0 3.6	I 46.610	5 42 30.00	14 30 40.71	14 1233
47	8.0	43.4	45.0	47.0	49.0	51.3	a	46 16.43	52 58 5.0 4.6	I 44.850	5 46 35.12	14 8 8.92	14 1259
48	7.5	52.3	54.0	56.1	58.0	0.4	a	47 25.55	53 38 5.0 4.1	I 47.430	5 47 44.14	14 49 0.17	14 1266
49	7.5	36.6	38.6	40.5	42.5	44.8	a	51 10.14	54 44 5.0 4.2	I 48.370	5 51 28.56	15 55 23.22	15 1219
50	8.0	23.8	25.8	27.7	29.5	31.7	a	52 57.22	54 34 5.0 3.7	I 47.515	5 53 15.66	−15 45 7.20	−15 1227
51	8.1	2.3	4.2	6.5	8.6	10.6	c	53 6.45	54 34 " "	V 43.750	5 53 24.89	−15 43 59.06	−15 1229
52	7.8	24.7	26.3	28.4	30.5	32.5	a	54 58.01	54 34 " "	I A (48).390	5 55 16.43	15 48 38.16	15 1238
53	8.3	40.6	42.2	44.2	46.3	48.6	a	56 13.72	53 20 5.0 3.6	I 48.905	5 56 32.32	14 31 31.93	−14 1307
54	10.0	40.7	43.2	45.0	47.0	48.8	e	56 15.53	53 20 " "	III 48.780	5 56 34.12	14 31 31.36	....

1894 FEBRUARY 13. ZONE 13. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
55	7.9	22.8	24.9	27.0	28.7	30.7	e	13 57.36	53 42 5.0 3.8	VII B 41.540	6 14 15.86	−14 48 14.67	−14 1399
56	8.3	37.7	39.8	41.7	43.6	45.7	e	19 12.30	53 16 5.0 3.6	VII 43.330	6 19 30.85	14 26 2.78	14 1429
57	7.7	35.6	37.8	39.6	41.6	43.5	e	20 10.22	53 16 " "	VII 45.890	6 20 28.76	14 26 51.99	14 1432
58	8.4	8.4	10.6	12.7	14.8	16.9	c	24 12.69	54 38 5.0 3.4	V 42.190	6 24 31.03	15 47 46.03	15 1399
59	7.9	3.3	5.0	7.1	9.0	11.3	a	25 36.55	53 52 5.0 3.7	III 43.210	6 25 55.00	15 2 2.51	15 1410
60	8.5	18.9	20.6	22.6	24.6	26.7	a	26 52.17	54 24 5.0 3.8	III 45.550	6 27 10.54	−15 34 49.29	−15 1415

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
61	8.6	17.7	19.5	21.4	23.5	25.6	a	27 51.03	54 24	5.0	3.8	III	49.370	6 28 9.39	−15 36 2.51	−15 1422
62	8.2	46.9	48.8	50.6	52.8	54.9	a	29 20.28	54 24	"	"	III B	38.470	6 29 38.65	15 29 23.50	15 1431
63	8.7	30.0	32.0	33.8	35.8	38.0	a	34 3.29	53 34	5.0	3.7	I	46.350	6 34 21.76	14 45 4.07	14 1523
64	8.3	34.8	36.6	38.6	40.5	42.6	a	35 7.89	52 48	5.0	4.2	I	43.590	6 35 26.48	−13 58 10.29	−13 1597
65	8.3	50.8	52.6	54.2	56.5	58.7	a	36 23.82	52 42	5.0	4.2	I	45.740	6 36 42.41	−13 52 51.57	−13 1608
66	7.0	12.1	14.0	16.4	18.6	20.7	c	37 16.37	53 56	5.0	3.6	III	45.630	6 37 34.79	15 6 54.87	15 1479
67	8.2	32.9	34.6	36.6	38.5	40.6	a	44 5.91	52 48	5.0	3.7	I A	42.350	6 44 24.47	14 1 4.32	13 1668
68	8.4	45.6	47.5	49.8	51.9	54.0	c	44 49.77	52 48	"	"	III B	43.530	6 45 8.34	13 55 3.42	13 1674
69	7.5	58.2	0.3	2.6	4.7	6.8	c	46 2.53	52 58	5.0	4.0	III	45.130	6 46 21.07	14 8 47.45	14 1614
70	7.7	46.4	48.2	50.0	52.0	54.3	a	8 19.57	53 48	5.0	3.9	I B	44.610	7 8 38.00	14 55 37.22	14 1775
71	8.2	56.0	58.3	0.0	2.0	4.0	e	8 30.58	53 48	"	"	VII	50.650	7 8 49.00	15 0 49.44	14 1777
72	8.5	39.9	42.0	44.1	46.2	48.4	c	10 44.13	54 8	5.0	4.0	V	46.380	7 11 2.52	15 19 28.83	15 1729
73	6.0	50.0	52.1	53.9	55.9	57.8	e	11 24.40	54 8	"	"	VII A	51.980	7 11 42.77	15 24 30.10	15 1734
74	8.1	53.7	57.9	2.0	3.8	6.7	c_3 d_3	12 53.76	52 54	5.0	3.4	VI	45.090	7 13 12.31	−14 5 2.32	−14 1815
75	7.8	10.7	13.0	15.3	17.3	19.5	c	14 15.17	53 12	5.0	3.6	V	48.020	7 14 33.68	−14 23 58.97	−14 1825
76	8.0	32.3	34.2	36.1	38.1	40.5	a	17 5.64	53 44	5.0	2.8	I	41.025	7 17 24.08	14 53 44.91	14 1861
77	7.7	34.0	36.5	38.4	40.2	42.2	e	17 8.85	53 20	5.0	2.5	V	47.000	7 17 27.34	14 31 40.82	14 1864
78	8.2	41.0	43.1	45.4	47.5	49.7	c	18 45.35	53 50	5.0	4.7	III	45.390	7 19 3.78	15 1 11.89	14 1876
79	7.6	59.2	1.0	3.0	5.0	7.0	a	20 32.45	53 52	5.0	3.8	III	42.820	7 20 50.88	15 2 23.50	14 1888
80	7.9	49.9	51.5	53.6	55.5	57.8	a	23 22.95	52 58	5.0	4.2	I	48.440	7 23 41.49	14 10 7.69	14 1915
81	7.0	26.7	28.3	30.2	32.1	34.4	a	24 59.63	52 58	"	"	I	44.940	7 25 18.18	14 9 1.88	14 1928
82	8.9	0.1	1.8	4.1	6.5	8.6	c	25 4.23	52 58	"	"	V	43.750	7 25 22.78	14 8 42.69	14 1929
83	9.0	26.8	29.2	31.2	32.9	35.0	e	26 1.54	53 50	5.0	4.3	VII	44.070	7 26 19.98	15 0 53.25	14 1939
84	7.7	51.3	53.6	55.3	57.2	59.4	e	26 25.87	53 50	"	"	VII A	47.660	7 26 44.30	−15 5 14.66	−15 1875
85	6.3	52.8	54.9	57.0	59.0	1.0	e	28 27.58	52 56	5.0	4.8	VII	45.610	7 28 46.14	−14 7 21.43	−14 1966
86	7.9	55.3	57.4	59.6	1.7	3.8	c	29 59.59	52 46	5.0	4.2	V	43.270	7 30 18.18	13 56 35.42	13 2104
87	7.7	40.7	42.5	44.2	46.4	48.5	a	32 13.75	52 58	5.0	4.6	I B	45.390	7 32 32.32	14 6 1.93	14 2039
88	8.6	9.0	11.0	12.9	14.8	17.2	a	32 42.27	52 58	"	"	III A	43.490	7 33 0.83	14 11 53.15	14 2052
89	7.5	9.3	11.6	13.5	15.5	17.6	e	32 44.13	52 58	"	"	VII A	46.700	7 33 2.68	14 12 57.12	14 2053
90	8.1	13.9	15.4	17.4	19.4	21.4	a	37 46.79	52.56	5.0	4.6	I	44.320	7 38 5.36	14 6 56.38	14 2158
91	8.4	53.9	55.7	58.0	0.2	2.4	c	37 58.05	52.56	"	"	III B	43.120	7 38 16.63	14 3 23.12	13 2183
92	8.9	10.6	12.5	14.5	16.5	18.6	a	40 43.90	53 30	5.0	3.3	I	47.030	7 41 2.41	14 41 50.37	14 2197
93	6.0	2.0	4.2	6.4	10.4	12.0	c_3 d_2	41 2.04	53 8	5.0	3.0	VI	44.980	7 41 20.59	14 19 14.45	14 2199
94	8.5	32.4	34.0	36.0	38.0	40.2	a	44 5.44	53 10	5.0	4.2	I	47.040	7 44 24.00	−14 21 51.64	−14 2223
95	8.9	21.4	23.4	25.2	27.2	29.4	a	44 54.65	53 10	"	"	I A	41.720	7 45 13.20	−14 23 23.97	−14 2230
96	7.9	20.7	22.4	24.7	26.4	28.6	a	46 53.96	53 48	5.0	4.5	I	47.550	7 47 12.45	15 0 4.65	14 2245
97	8.0	22.0	24.0	26.1	28.2	30.5	c	47 26.17	53 48	"	"	III A	48.910	7 47 44.65	15 3 45.72	14 2251
98	8.7	9.4	11.1	13.0	15.1	17.2	a	50 42.58	53 58	5.0	4.2	I	44.350	7 51 1.06	15 9 5.85	15 2132
99	7.8	17.8	19.8	22.0	26.3	27.8	c_3 d_2	51 17.77	53 22	5.0	3.2	VI A	49.800	7 51 36.32	14 38 4.72	14 2281
100	8.6	7.6	9.9	11.5	13.6	15.5	e	52 42.27	52 52	5.0	4.2	VII	44.020	7 53 0.89	14 3 2.21	13 2319
101	8.5	36.1	37.7	39.6	41.7	43.9	a	56 9.10	53 2	5.0	4.4	I	47.270	7 56 27.71	14 14 1.33	14 2326
102	7.6	9.6	11.5	13.5	15.4	17.4	a	56 42.82	53 18	5.0	4.2	III	43.860	7 57 1.40	14 28 59.16	14 2332
103	8.2	36.9	39.0	41.4	43.5	45.6	c	57 41.29	53 48	5.0	4.4	V	45.940	7 57 59.81	14 59 42.39	14 2341
104	8.7	31.4	32.9	34.8	36.8	39.1	a	0 4.40	53 48	"	"	I	47.905	8 0 22.92	−15 0 17.46	−14 2360
105	7.6	22.3	24.3	26.7	28.8	30.8	c	0 26.59	52 48	5.0	4.3	III	47.040	8 0 45.23	−14 0 0.02	−13 2380
106	8.0	25.5	27.3	29.3	31.2	33.4	a	1 58.61	52 48	"	"	I	48.680	8 2 17.26	14 0 30.13	13 2391
107	7.4	3.2	5.3	7.7	9.7	11.7	c	2 7.53	52 48	"	"	V A	42.990	8 2 26.18	14 1 56.79	13 2392
108	8.3	58.0	0.2	2.2	4.4	6.5	c	8 2.27	53 28	5.0	4.0	V	42.930	8 8 20.87	14 38 48.56	14 2422
109	8.1	17.6	19.5	21.4	23.4	25.6	a	9 50.91	53 50	5.0	4.7	I	41.960	8 10 9.48	15 0 28.90	14 2440
110	7.9	50.6	52.5	54.3	56.4	58.6	a	13 23.91	53 58	5.0	4.5	I	48.420	8 13 42.47	15 10 33.70	15 2370
111	8.5	35.0	37.1	39.4	41.4	43.7	c	13 39.33	53 58	"	"	III B	47.860	8 13 57.90	15 7 12.64	14 2465
112	7.8	40.0	42.0	44.4	46.6	48.6	c	14 44.33	54 2	5.0	4.1	V B	49.230	8 15 2.89	15 11 40.75	15 2378
113	8.6	45.6	47.7	49.7	51.7	53.5	e	15 20.12	54 2	"	"	VII	52.450	8 15 38.68	15 15 56.14	15 2382
114	7.8	14.6	17.0	18.8	20.8	22.7	e	17 49.22	54 24	5.0	4.2	VII	45.540	8 18 7.75	−15 35 46.82	−15 2405
115	7.6	9.8	11.6	13.6	15.5	17.6	a	19 42.92	53 6	5.0	3.6	III	42.200	8 20 1.60	−14 16 36.82	−14 2503
116	8.7	32.8	35.1	37.0	38.7	40.8	e	20 7.41	53 38	5.0	4.1	VII A	38.770	8 20 26.03	14 50 49.46	14 2511
117	7.7	46.2	48.0	50.0	52.0	54.0	a	23 19.34	53 4	5.0	2.8	III	43.720	8 23 38.05	14 15 6.78	14 2532
118	7.8	52.7	54.5	56.3	58.3	0.5	a	25 25.86	53 50	5.0	3.9	I	46.160	8 25 44.50	15 1 55.10	14 2548
119	8.6	45 7	47.4	49.1	51.0	53.3	a	26 18.59	52 58	5.0	4.3	III	46.270	8 26 37.32	14 9 57.02	14 2554
120	8.0	33.1	35.2	37.4	39.4	41.6	c	26 37.35	52 48	5.0	4.5	V	48.320	8 26 56.10	14 0 37.44	13 2572
121	7.0	38.7	40.7	42.8	47.0	48.6	c_3 d_2	27 38.61	52 54	5.0	4.4	VI	42.250	8 27 57.36	14 4 43.29	13 2583
122	7.8	44.4	46.5	48.6	50.9	52.6	c	28 48.61	52 54	"	"	III	37.800	8 29 7.36	14 3 16.69	13 2593
123	7.8	48.4	50.4	52.7	54.7	56.8	c	29 52.61	52 54	"	"	V	47.720	8 30 11.36	14 6 27.59	13 2600
124	8.7	57.6	59.7	1.9	4.0	6.2	c	31 1.89	52 54	"	"	V B	44.210	8 31 20.66	−14 2 8.86	−13 2606
125	7.4	3.6	5.4	7.2	9.2	11.4	a	34 36.64	52 56	5.0	4.4	I	46.770	8 34 55.41	−14 8 8.10	−13 2633
126	8.5	58.0	59.9	1.8	3.7	5.8	a	35 31.15	53 6	5.0	3.5	III	45.820	8 35 49.91	14 17 52.20	14 2612
127	7.9	24.0	26.3	28.2	30.0	32.0	e	35 58.65	53 38	5.0	3.9	V	41.796	8 36 17.36	14 48 39.17	14 2614
128	7.6	20.7	22.6	24.5	26.3	28.7	a	38 53.92	53 30	5.0	4.0	I	46.720	8 39 12.66	14 42 10.29	14 2631
129	8.8	1.0	3.1	5.3	7.5	9.6	c	39 5.31	53 30	"	"	V B	40.200	8 39 24.06	14 36 57.32	14 2633
130	7.5	2.5	4.7	6.7	8.8	11.0	c	40 6.75	53 52	5.0	4.0	V	44.660	8 40 25.46	15 3 36.12	14 2637
131	7.7	3.2	5.5	7.5	9.7	11.8	c	41 7.55	52 48	5.0	3.1	V	45.775	8 41 26.38	13 59 54.14	13 2670
132	8.4	4.5	6.4	8.2	10.1	12.3	a	44 37.71	53 54	5.0	4.1	I	45.290	8 44 56.44	15 5 46.57	14 2665
133	8.7	54.7	56.5	58.5	0.4	2.6	a	45 27.84	53 2	5.0	3.5	III	47.385	8 45 46.66	−14 14 25.72	−14 2669

Reduction Elements. Zones 12 and 13.

1894	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
February 13.3....	+0.235	+0.010	+0.503	+0.232	+0.032	+0.583
13.5....	+0.230	+0.055	+0.606 +0.640			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	A Eridani		Lalande 8205		60 Eridani		64 Eridani		6 Monocerotis *		*β* Canis Majoris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	49 22 4.95		59 44 4.85		55 14 4.25		51 32 4.80		49 32 4.35		56 44 4.95	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	41.960	4 35.00	41.580	4 26.85	44.065	5 14.60	43.070	4 56.27	41.840	4 35.34	44.090	5 15.51
II Red. to Mer......	.900	1.70	.480	1.59	.005	1.65	.030	1.68	.790	1.70	.090	1.63
VI Inclination	.810		.310		43.850		42.930		.940		43.890	
VII Refraction.......	.690	1 10.4	.280	1 43.4	.770	1 27.1	.800	1 16.2	.860	1 11.2	.810	1 32.6

	*ξ*² Canis Majoris		*α* Canis Majoris		19 Hydrae		*α* Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	61 42 4.75		55 24 4.45		47 0 4.25		47 0 4.15	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.100	5 34.30	44.475	5 22.19	43.740	5 8.92	51.070	7 28.42
II Red. to Mer......	.050	1.57	.400	1.65	.720	1.72	.005	1.71
VI Inclination	44.870		.230		.535			−0.54
VII Refraction.......	.810	1 52.8	.180	1 28.1	.500	1 5.7	50.800	1 5.8

*Bisections discordant.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
A Eridani	4 9 18.41	11	+0.71	+2.44	49 27 52.0	39.2
Lalande 8205	4 15 58.85	11	+0.80	+2.45	59 50 16.7	39.0
Groombridge 848..	4 34 33.15	11	−0.37	[+2.68]	323 12	....
60 Eridani	4 45 22.45	11	+0.76	+2.39	55 20 47.6	39.0
64 Eridani	4 54 57.75	11	+0.73	+2.42	51 38 19.0	39.2
6 Monocerotis	6 12 33.94	11	+0.71	+2.52	49 37 52.6	[41.4]
β Canis Majoris.....	6 17 59.76	11	+0.77	+2.43	56 50 54.7	40.0
*ξ*² Canis Majoris.....	6 30 34.67	8	+0.83	+2.45	61 49 33.4	38.7
α Canis Majoris.....	6 40 26.52	11	+0.76	+2.60	55 30 56.4	39.9
51 H. Cephei	6 51 13.00	7	−3.75	[+2.13]	311 44	....
19 Hydrae...........	9 3 29.08	10	+0.69	+2.57	47 6 20.6	39.2
1 H. Draconis	9 22 8.93	3	−0.99	[+2.25]	317 8	....
α Hydrae	9 22 20.86	8	+0.69	+2.59	47 8 39.5	39.8

h 4.528	............*dt*	s +2.425
	Hourly rate	+0.0341
		° ′ ″
	Adopted Equator Point..........	38 56 39.33

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 13	29.905	30.8	31.3
4 58	29.905	31.0	30.5
5 44	29.925	30.4	29.7
6 23	29.945	29.9	29.3
6 57	29.955	29.5	28.5
8 5	29.945	27.8	26.4
9 0	29.965	27.5	26.0
9 45	29.975	27.8	25.7

Note.
19 Hydrae. Clouds after this.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0					*D* = Z. D. S. to 1894.0				
			52°	53°	54°	55°	56°	52°	53°	54°	55°	56°
°	s	h m	s	s	s	s	s	″	″	″	″	″
52	+0.730	4 0	+16.400	+16.267	+16.131	+15.995	+15.860	−2.31	−2.61	−2.91	−3.21	−3.49
53	0.739	4 30	16.140	15.998	15.856	15.713	15.567	1.85	2.14	2.43	2.71	2.99
54	0.748	5 0	15.915	15.770	15.621	15.472	15.321	1.47	1.75	2.03	2.29	2.55
55	0.758	5 30	15.731	15.580	15.431	15.278	15.124	1.18	1.44	1.68	1.94	2.18
56	+0.767	6 0	15.588	15.439	15.288	15.135	14.980	0.97	1.20	1.43	1.66	1.89
		6 30	15.491	15.345	15.195	15.044	14.890	0.86	1.06	1.27	1.47	1.67
		7 0	15.441	15.297	15.154	15.007	14.860	0.86	1.03	1.21	1.37	1.54
		7 30	15.437	15.302	15.164	15.025	14.885	0.94	1.07	1.20	1.35	1.48
		8 0	15.483	15.356	15.229	15.099	14.968	1.12	1.22	1.32	1.42	1.51
		8 30	15.573	15.459	15.343	15.225	15.107	1.40	1.46	1.52	1.58	1.63
		9 0	+15.710	+15.610	+15.506	+15.403	+15.299	−1.76	−1.79	−1.81	−1.83	−1.84

APPARENT RIGHT ASCENSION.	*R*				
	52°	53°	54°	55°	56°
h m	″	″	″	″	″
4 0	77.09	79.91	82.87	85.96	89.23
4 30	77.18	80.00	82.97	86.06	89.33
5 0	77.25	80.08	83.04	86.14	89.41
5 30	77.38	80.20	83.18	86.28	89.56
6 0	77.48	80.32	83.29	86.40	89.68
6 30	77.57	80.41	83.39	86.50	89.78
7 0	77.71	80.56	83.54	86.66	89.95
7 30	77.86	80.70	83.70	86.82	90.12
8 0	78.02	80.87	83.87	87.00	90.30
8 30	78.09	80.95	83.95	87.08	90.39
9 0	78.14	81.00	84.00	87.14	90.45

1894 FEBRUARY 16. ZONE 14. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	8.0	50.8	53.0	55.0	57.3	59.5	c	37 55.13	54 56	5.0	4.5	III	45.900	4 38 14.91	−16 6 1.12	−16 926
2	7.3	44.0	46.0	48.0	49.9	51.9	e	38 18.36	54 38	5.0	3.5	VII	47.340	4 38 38.18	15 48 30.42	15 848
3	8.7	18.0	19.8	21.7	23.8	26.0	a	42 51.43	54 58	5.0	3.6	I	44.360	4 43 11.17	16 7 32.18	16 951
4	7.0	49.7	51.5	53.6	55.5	57.6	a	44 23.11	54 40	5.0	4.1	I A	46.860	4 44 42.87	15 53 33.14	15 868
5	7.8	38.1	40.2	42.4	44.7	46.8	c	44 42.45	54 40	“	“	III B	47.880	4 45 2.22	15 47 29.00	15 871
6	8.9	18.9	21.3	23.2	25.0	27.0	e	44 53.47	54 40	“	“	VII A	50.650	4 45 13.22	15 54 50.09	15 872
7	8.4	42.9	45.0	47.0	49.3	51.6	c	46 47.17	54 48	5.0	3.9	III	40.960	4 47 6.90	15 56 30.96	16 972
8	8.1	6.0	8.2	10.4	12.6	14.8	c	48 10.41	54 40	5.0	3.7	III	47.270	4 48 30.14	15 50 30.28	15 887
9	7.7	4.0	6.0	8.0	10.0	12.0	a	49 37.58	55 4	5.0	4.2	I	44.490	4 49 57.25	16 13 38.74	16 988
10	5.8	25.4	27.5	29.6	31.8	33.9	c	50 29.65	55 24	5.0	4.5	V	47.660	4 50 49.26	−16 34 44.16	−16 992
11	7.0	54.0	56.2	58.3	0.6	2.6	c	51 58.35	55 8	5.0	4.6	III	43.850	4 52 17.99	−16 17 29.98	−16 999
12	7.0	10.2	12.4	14.5	16.7	18.8	c	53 14.53	55 8	“	“	III A	42.660	4 53 34.16	16 20 21.13	16 1006
13	7.9	4.5	6.8	8.7	10.6	12.6	e	53 38.96	55 12	5.0	5.3	VII	44.025	4 53 58.58	16 21 37.82	16 1009
14	8.1	20.2	22.5	24.5	26.2	28.0	e	54 54.76	54 6	5.0	3.7	V	44.230	4 55 14.52	15 15 36.91	15 916
15	7.8	36.7	38.8	40.9	43.2	45.4	c	57 41.01	54 40	5.0	3.8	III	48.780	4 58 0.67	15 51 5.02	15 927
16	7.0	19.8	21.5	23.6	25.5	27.8	a	58 53 17	54 40	“	“	I	47.980	4 59 12.82	15 50 48.57	15 931
17	8.3	53.0	55.0	57.1	59.2	1.5	c	59 57.17	53 28	5.0	3.5	III	48.090	5 0 16.98	14 38 49.51	14 1034
18	6.5	28.1	30.6	32.4	34.2	36.2	e	0 2.91	53 12	5.0	3.5	VII	43.740	5 0 22.76	14 21 29.14	14 1035
19	7.2	10.7	12.5	14.5	16.5	18.7	a	7 43.99	53 54	5.0	3.7	I	46.300	5 8 3.68	15 4 19.00	15 971
20	8.4	17.0	19.0	21.4	23.5	25.7	c	8 21.33	53 54	“	“	V B	45.070	5 8 41.03	−15 0 46.96	−15 973
21	8.3	29.7	31.8	34.0	36.1	38.4	c	9 34.01	53 54	“	“	V A	48.040	5 9 53.68	−15 8 9.50	−15 979
22	7.0	34.6	36.5	38.4	40.3	42.4	a	11 7.79	53 26	5.0	3.7	III	48.435	5 11 27.53	14 37 1.92	14 1080
23	8.0	13.8	15.7	17.6	19.6	21.8	a	13 46.98	52 58	5.0	4.0	I	43.180	5 14 6.77	14 7 20.35	14 1093
24	7.7	30.6	32.4	34.5	36.4	38.5	a	15 3.99	54 34	5.0	4.1	I	41.560	5 15 23.55	15 42 54.72	15 1014
25	7.0	46.2	48.0	50.1	52.1	54.2	a	16 19.43	53 4	5.0	4.2	I	48.730	5 16 39.18	14 15 7.70	14 1103
26	8.6	53.6	56.0	57.8	59.6	1.6	e	16 28.32	53 14	5.0	3.6	V	47.700	5 16 48.05	14 24 51.76	14 1104
27	6.8	53.7	55.7	57.6	59.5	1.7	a	18 27.04	53 46	5.0	4.2	I	43.850	5 18 46.68	14 55 37.87	14 1117
28	7.6	49.3	51.2	53.1	55.0	57.3	a	20 22.43	52 40	5.0	4.4	III	43.680	5 20 42.22	13 49 34.55	13 1147
29	8.2	54.6	56.4	58.1	0.4	2.4	a	26 27.80	53 56	5.0	3.9	I	43.120	5 26 47.37	15 5 28.50	15 1067
30	8.0	52.7	54.7	56.8	59.0	1.2	c	26 56.89	53 18	5.0	3.6	III	44.090	5 27 16.55	−14 27 47.13	−14 1160
31	8.5	4.0	5.8	7.8	9.7	11.8	a	28 37.36	54 46	5.0	3.1	III	43.150	5 28 56.80	−15 55 34.02	−15 1080
32	6.8	4.0	5.8	7.8	9.8	12.0	a	30 37.41	54 38	5.0	3.7	I	45.160	5 30 56.86	15 48 11.45	15 1089
33	7.0	19.0	21.0	23.2	25.4	27.7	c	31 23.27	54 42	5.0	4.1	III	47.700	5 31 42.70	15 53 2.43	15 1094
34	7.2	28.7	30.9	33.0	35.2	37.4	c	32 33.05	55 36	5.0	3.8	III	43.110	5 32 52.35	16 45 38.24	16 1185
35	7.3	22.8	25.1	27.3	29.4	31.6	c	35 27.25	55(20)	5.0	4.8	V	42.970	5 35 46.57	16 29 38.45	16 1199
36	7.8	43.8	45.9	48.0	50.2	52.4	c	36 48.07	55 18	5.0	4.2	V	46.680	5 37 7.39	16 28 49.39	16 1205
37	8.5	0.7	2.7	4.8	7.0	9.3	c	39 4.91	54 42	5.0	4.4	III	42.135	5 39 24.30	15 51 20.73	15 1139
38	8.0	42.4	44.9	46.7	48.7	50.6	e	39 17.06	54 42	......	......	......	......	5 39 36.45	15 51 55	15 1140
39	7.6	6.1	8.2	10.4	12.6	14.8	c	45 10.43	54 22	5.0	4.3	III B	44.330	5 45 29.85	15 28 52.45	15 1182
40	7.9	......	4.8	6.7	8.6	10.7	e	45 37.12	54 22	“	“	VII	43.340	5 45 56.53	−15 31 49.23	−15 1185
41	7.0	7.8	9.8	12.0	14.0	16.0	c	47 11.93	54 22	“	“	III	43.690	5 47 31.33	−15 31 53.67	−15 1193
42	7.2	5.5	7.9	9.8	11.6	13.7	e	47 40.14	54 22	“	“	......	......	5 47 59.54	15 34 18	15 1199
43	8.9	18.2	20.7	22.6	24.4	26.4	e	47 52.90	54 22	“	“	VII A	36.660	5 48 12.30	15 32 56.15	15 1202
44	7.1	15.8	17.8	20.0	22.3	24.4	c	51 20.07	54 22	5.0	4.6	III	44.700	5 51 39.45	15 32 15.24	15 1221
45	8.6	14.0	16.0	17.8	19.7	21.7	a	54 47.51	55 38	5.0	4.5	III	41.810	5 55 6.70	16 47 25.84	16 1319
46	7.2	47.2	49.0	51.4	53.5	55.6	(c)	54 51.35	55 38	“	“	V	42.140	5 55 10.53	16 47 33.79	16 1320
47	6.3	16.5	18.2	20.3	22.3	24.5	a	56 49.85	54 24	5.0	4.4	I	48.270	5 57 9.20	15 35 24.33	15 1249
48	8.3	21.8	23.9	26.0	28.0	30.1	c	57 25.97	54 32	5.0	4.3	V	43.710	5 57 45.30	15 42 1.64	15 1253
49	8.4	42.9	45.0	47.0	49.0	50.9	e	58 17.37	54 34	5.0	4.5	V	43.230	5 58 36.69	15 43 53.15	15 1258
50	8.1	37.6	39.9	41.9	44.0	46.1	c	0 41.91	54 58	5.0	3.6	V	45.200	6 1 1.16	−16 8 32.68	−16 1351

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
51	7.1	19.7	22.0	24.0	25.8	27.8	e	1 54.20	55	4	5.0	4.3	V	46.610	6 2 13.43	−16 15 0.80	−16 1359
52	8.0	21.3	23.3	25.5	27.7	29.9	c	3 25.55	54	14	5.0	4.1	V	45.600	6 3 44.90	15 24 39.81	15 1277
53	5.8	9.5	11.3	13.1	15.1	17.1	a	4 42.57	53	24	5.0	4.1	III	43.530	6 5 2.03	[14 33 57.11]	14 1348
54	8.6	27.9	30.2	32.2	33.9	36.0	e	5 2.62	53	24	"	"	V B	45.800	6 5 22.09	14 31 29.75	14 1350
55	7.5	57.9	0.0	2.0	4.2	6.4	c	7 2.11	54	26	5.0	3.9	III	46.030	6 7 21.42	15 36 48.78	15 1307
56	7.9	0.7	2.3	4.2	6.1	8.2	a	8 33.72	53	56	5.0	4.2	I	47.480	6 8 53.09	15 7 14.08	15 1313
57	7.3	55.3	57.5	59.5	1.7	3.8	c	11 59.57	53	56	5.0	3.8	V	41.470	6 12 18.93	15 5 24.72	15 1328
58	8.0	33.5	35.6	37.9	40.0	41.9	c	13 37.79	53	24	5.0	3.8	III	41.900	6 13 57.22	14 33 30.61	14 1396
59	8.2	5.3	7.3	9.1	11.3	13.4	a	14 38.63	53	24	"	"	III A	44.010	6 14 58.05	14 37 24.43	−14 1403
60	8.6	13.3	15.5	17.5	19.3	21.3	e	14 47.89	53	52	5.0	3.7	VII	49.230	6 15 7.25	−15 3 55.09	....
61	8.0	42.0	43.8	46.1	48.3	50.5	c	16 46.15	53	52	"	"	VI	41.480	6 17 5.51	−15 1 27.93	−15 1358
62	7.2	26.2	28.3	30.5	32.6	34.8	c	18 30.49	52	56	5.0	5.1	V	44.030	6 18 49.97	14 6 14.75	14 1424
63	6.5	12.0	13.9	16.3	18.5	20.5	c	20 16.25	53	54	5.0	4.6	V	46.480	6 20 35.59	15 5 4.74	15 1377
64	6.0	17.4	19.2	21.2	23.0	25.1	a	21 50.53	53	22	5.0	3.2	III	45.210	6 22 9.94	14 32 37.57	14 1450
65	8.0	38.0	40.0	41.9	43.9	46.0	a	25 11.46	54	28	5.0	3.3	I	47.490	6 25 30.70	15 39 24.11	15 1407
66	8.4	24.1	26.3	28.4	30.5	32.7	c	30 28.41	54	0	5.0	3.3	III	45.240	6 30 47.71	15 10 44.51	15 1441
67	8.4	9.7	12.0	13.8	15.7	17.7	e	30 44.26	54	0	"	"	V A	43.570	6 31 3.55	15 13 27.48	15 1445
68	8.5	......	48.9	51.0	52.9	55.1	e	31 21.46	53	56	5.0	3.4	VII	46.740	6 31 40.76	15 7 16.47	15 1449
69	8.0	4.7	6.7	8.6	10.5	12.7	a	34 37.99	53	24	5.0	3.7	I	44.830	6 34 57.36	14 34 35.56	14 1527
70	8.3	1.4	3.4	5.7	7.9	9.9	c	35 5.67	53	24	"	"	III A	49.390	6 35 25.03	−14 39 17.52	−14 1532
71	8.7	0.6	2.8	4.7	7.1	9.1	c	36 4.87	54	28	5.0	4.2	V	49.750	6 36 24.08	−15 40 16.63	−15 1474
72	7.7	45.9	47.8	49.6	51.9	53.9	a	38 19.28	54	14	5.0	4.2	I	44.390	6 38 38.53	15 24 31.72	15 1483
73	7.5	48.7	50.8	53.1	55.4	57.5	c	38 53.11	54	46	5.0	4.0	III	45.510	6 39 12.28	15 56 56.62	15 1489
74	8.0	47.8	50.0	52.1	54.2	56.4	c	39 52.11	55	28	5.0	4.3	V	40.940	6 40 11.18	16 37 34.13	16 1586
75	7.9	4.2	6.3	8.6	10.7	12.9	c	41 8.55	53	26	5.0	4.2	V	43.420	6 41 27.90	14 36 15.89	14 1574
76	8.2	58.1	0.0	1.9	3.9	6.0	a	43 31.41	54	6	5.0	4.2	I B	43.550	6 43 50.67	15 13 5.80	15 1519[1]
77	8.7	27.5	29.6	31.6	33.8	36.0	c	43 31.71	54	6	"	"	V B	42.820	6 43 50.98	15 12 55.21	15 1519[2]
78	8.5	25.6	27.8	29.6	31.5	33.6	e	44 0.09	54	6	"	"	VII A	43.040	6 44 19.34	15 19 26.34	15 1521
79	7.2	50.5	52.5	54.5	56.7	58.9	c	45 54.63	53	26	5.0	3.4	V	47.200	6 46 13.97	14 37 29.87	14 1610
80	7.0	24.0	25.8	27.8	29.7	31.9	a	47 57.40	54	54	5.0	3.9	III	46.750	6 48 16.54	−16 5 25.29	−16 1638

1894 FEBRUARY 16. ZONE 15. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

81	7.9	57.5	59.6	1.7	3.8	6.0	c	6 1.73	53	52	5.5	5.0	V	45.670	7 6 21.00	−15 3 13.28	−14 1752
82	7.5	49.9	52.0	54.0	56.3	58.5	c	7 54.15	54	8	5.5	3.8	III	48.110	7 8 13.38	15 19 59.22	15 1695
83	8.1	30.0	32.2	34.4	36.5	38.8	c	8 34.39	54	8	"	"	(V)	46.650	7 8 53.62	[15 19 33.40]	15 1704
84	8.3	8.7	11.0	12.9	14.8	16.7	e	8 43.29	54	8	"	"	VII	47.190	7 9 2.52	15 19 45.20	15 1707
85	7.0	22.1	24.4	26.0	28.0	30.0	e	9 56.58	54	8	"	"	VII	41.920	7 10 15.81	15 18 5.51	15 1720
86	7.0	8.1	10.4	12.5	14.7	16.8	c	12 12.51	53	28	5.5	5.0	III	48.630	7 12 31.82	14 40 9.94	14 1810
87	8.5	17.3	19.7	21.6	23.4	25.4	e	15 51.87	54	46	5.5	5.3	VII	44.710	7 16 11.02	15 57 4.23	15 1774
88	8.5	29.1	31.1	33.3	35.5	37.6	c	17 33.33	54	12	5.5	5.3	III	43.740	7 17 52.55	15 22 41.81	15 1786
89	7.9	39.5	41.4	43.3	45.4	47.6	a	19 12.79	53	26	5.5	4.4	III	45.100	7 19 32.11	14 37 6.63	14 1880
90	8.3	9.5	11.6	13.8	15.9	18.0	c	19 13.77	53	26	"	"	VI B	41.060	7 19 33.10	−14 32 38.86	−14 1881
91	8.0	32.3	34.6	36.6	38.9	41.0	c	20 36.69	53	4	5.5	6.0	V A	37.890	7 20 56.06	−14 16 3.64	−14 1889
92	8.3	41.4	43.1	45.0	47.0	49.2	a	23 14.49	53	28	5.5	4.1	I	42.230	7 23 33.81	14 38 11.32	14 1914
93	8.7	57.7	59.6	1.6	3.5	5.6	a	24 31.00	53	46	5.5	4.4	I	45.180	7 24 50.28	14 57 9.11	14 1926
94	8.0	53.7	55.7	58.0	0.3	2.2	c	24 57.99	52	44	5.5	3.9	V	50.350	7 25 17.40	13 56 47.97	13 2052
95	8.2	8.6	10.5	12.5	14.5	16.7	a	27 41.85	53	0	5.5	3.9	I	45.170	7 28 1.23	14 11 8.03	14 1956
96	8.4	8.5	10.1	12.0	14.3	16.4	a	32 41.55	53	0	"	"	I	47.570	7 33 0.93	14 11 56.14	14 2052
97	7.0	39.1	41.1	43.2	45.5	47.6	c	32 43.31	53	0	"	"	V	50.600	7 33 2.69	14 12 57.24	14 2053
98	8.6	55.6	57.8	59.9	2.1	4.3	c	33 59.95	53	0	"	"	V B	41.940	7 34 19.34	14 7 0.60	14 2066
99	8.3	26.8	29.0	30.8	32.6	34.7	e	34 1.41	53	0	"	"	VII(B)	47.440	7 34 20.80	14 8 46.69	14 2067
100	8.8	43.3	45.4	47.6	49.8	51.8	c	35 47.59	52	48	5.5	4.8	V	47.680	7 36 7.00	−14 0 3.02	−13 2163
101	8.2	49.8	51.8	54.0	56.1	58.3	c	37 54.01	53	26	5.5	4.2	....		7 38 13.35	−14 37 29	−14 2166
102	8.6	48.0	50.2	52.3	54.1	56.0	e	38 22.70	53	26	"	"	VII	40.160	7 38 42.04	14 35 44.07	14 2178
103	8.5	45.4	47.3	49.3	51.2	53.4	a	44 18.73	53	52	5.5	4.2	III	43.330	7 44 38.02	15 2 45.38	14 2227
104	7.4	30.2	32.5	34.5	36.8	38.9	c	44 34.59	53	52	"	"	V A	42.220	7 44 53.88	15 5 39.01	14 2229
105	8.9	29.6	31.9	33.7	35.7	37.7	e	45 4.24	53	52	"	"	VII B	44.130	7 45 23.54	14 59 51.56	14 2233
106	8.6	4.3	6.5	8.5	10.7	12.8	c	47 8.57	53	26	5.5	4.0	III	47.110	7 47 27.92	14 37 57.29	14 2248
107	7.0	48.8	51.0	52.9	54.8	56.8	e	47 23.44	53	26	"	"	V B	48.910	7 47 42.80	14 35 20.92	14 2250
108	9.1	17.8	19.9	21.9	24.0	26.3	c	49 21.99	54	22	5.5	5.0	V	42.430	7 49 41.23	15 32 34.12	15 2120
109	8.9	2.7	4.6	6.4	8.3	10.7	a	50 36.03	54	22	"	"	III A	39.920	7 50 55.27	15 34 58.42	15 2130
110	7.5	6.9	8.6	10.8	13.0	15.2	(c)	51 10.91	54	22	"	"	VI A	47.870	7 51 30.15	−15 37 32.22	−15 2137
111	7.6	6.0	8.0	10.2	12.4	14.4	c	53 10.21	53	10	5.5	4.8	III	48.400	7 53 29.60	−14 22 24.26	−14 2304
112	8.7	15.0	17.0	19.2	21.5	23.6	c	55 19.27	54	44	5.5	3.4	III	42.580	7 55 38.48	15 54 38.43	15 2180
113	8.0	55.1	57.3	59.5	1.7	3.7	c	56 59.47	54	8	5.5	3.9	III	44.190	7 57 18.76	−15 19 8.27	−15 2201

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
114	8.0	8.6	11.1	13.0	14.6	16.7	e	57 43.35	53 34	5.5	3.9	VII	46.990	7 58 2.71	−14 46 3.27	−14 2342
115	8.0	32.1	34.2	36.2	38.0	39.9	e	59 6.55	54 12	5.5	4.0	V	45.240	7 59 25.84	15 23 31.09	15 2233
116	7.9	24.3	26.5	28.6	32.7	34.1	c_3 d_2	0 24.28	53 12	5.5	4.4	V	44.920	8 0 43.69	14 23 22.84	14 2362
117	8.0	40.2	42.1	44.1	46.0	48.3	a	2 13.45	53 12	"	"	III B	41.540	8 2 32.87	14 19 5.36	14 2375
118	8.2	37.2	39.1	41.0	43.0	45.2	a	3 10.42	53 12	"	"	I	40.400	8 3 29.84	14 21 54.61	14 2382
119	8.0	14.0	16.2	18.2	20.0	22.0	e	3 48.61	53 46	5.5	4.8	V	42.130	8 4 7.96	14 56 33.12	14 2389
120	8.6	39.8	41.8	43.9	45.7	47.7	e	6 14.42	52 52	5.5	4.8	VII	47.720	8 6 33.88	−14 4 19.45	−13 2425
121	7.5	50.1	51.5	53.3	55.1	57.3	a	6 22.74	52 52	"	"	I	48.610	8 6 42.20	−14 4 31.55	−13 2426
122	7.8	6.0	7.8	9.7	11.6	13.8	a	13 39.08	53 4	5.5	4.8	I	44.410	8 13 58.54	14 15 15.39	14 2466
123	8.0	10.1	12.2	14.0	15.9	18.0	a	14 43.47	54 0	5.5	4.4	III	45.540	8 15 2.83	15 11 41.70	15 2378
124	7.5	48.0	49.7	51.8	53.7	55.8	a	16 21.16	53 28	5.5	4.4	I	45.010	8 16 40.58	14 39 28.94	14 2483
125	8.3	14.8	16.6	18.5	20.5	22.8	a	19 48.03	53 40	5.5	4.8	I	46.060	8 20 7.44	14 51 51.20	14 2505
126	8.0	17.6	19.1	21.0	23.0	25.3	a	20 50.62	53 54	5.5	4.6	III	47.160	8 21 10.01	15 6 15.00	14 2515
127	8.2	40.2	42.2	44.5	46.9	48.9	c	21 44.55	54 22	5.5	4.7	V	46.440	8 22 3.89	15 34 4.78	15 2436
128	8.2	35.6	37.8	40.0	42.0	44.1	c	22 39.91	54 22	"	"	III A	47.570	8 22 59.25	15 37 38.16	15 2445
129	9.3	53.4	55.5	57.8	59.9	2.0	c	23 57.73	54 22	"	"	V B	39.910	8 24 17.09	15 28 48.99	15 2453
130	7.5	24.2	26.5	28.5	30.5	32.5	e	23 58.89	54 22	"	"	VII	39.900	8 24 18.25	−15 32 2.67	−15 2454
131	7.4	23.3	25.2	27.2	29.1	31.3	a	25 56.70	54 22	"	"	III B	43.420	8 26 16.07	−15 29 55.11	−15 2472
132	8.5	5.4	7.7	9.6	11.8	14.0	c	26 9.71	54 22	"	"	V	41.920	8 26 29.07	[15 32 40.60]	15 2476
133	8.0	55.0	57.1	59.0	0.9	2.9	e	27 29.49	53 52	5.5	5.0	V	46.310	8 27 48.91	15 4 3.34	14 2563
134	8.0	29.6	31.7	33.6	35.6	37.5	e	32 4.15	53 34	5.5	3.0	V	41.390	8 32 23.63	14 44 29.66	14 2590
135	8.6	25.0	27.2	29.5	31.6	33.7	c	33 29.41	53 34	"	"	V A	49.450	8 33 48.88	14 50 16.65	14 2595
136	8.4	29.3	31.7	33.5	35.4	37.4	e	34 4.01	53 34	"	"	VII A	44.080	8 34 23.49	14 48 35.98	14 2599
137	7.8	29.8	32.0	33.9	35.9	37.7	e	35 4.42	53 30	5.5	4.5	VII	42.690	8 35 23.92	14 40 57.64	14 2608
138	6.0	41.2	43.3	45.5	47.7	49.9	c	36 45.53	54 24	5.5	4.5	V	42.790	8 37 4.94	15 35 1.49	15 2554
139	8.0	38.0	40.2	42.4	44.7	46.8	c	37 42.43	54 24	"	"	V A	40.880	8 38 1.84	15 37 38.50	15 2558
140	7.9	49.2	51.6	53.6	55.8	58.0	c	38 53.65	54 24	"	"	III	44.640	8 39 13.07	−15 35 35.94	−15 2569
141	8.6	29.2	31.6	33.3	35.1	37.2	e	39 3.71	54 24	"	"	V	49.210	8 39 23.13	−15 37 4.63	−15 2570
142	8.3	24.7	27.1	28.9	30.8	32.7	e	39 59.27	54 24	"	"	VII	56.190	8 40 18.69	15 39 19.30	15 2574
143	8.1	22.9	24.9	27.0	29.2	31.4	c	42 27.09	54 14	5.5	3.4	III	44.320	8 42 46.54	15 25 30.19	15 2591
144	7.7	42.4	44.3	46.1	48.0	50.3	a	44 15.65	54 0	5.5	3.6	I	44.590	8 44 35.14	15 11 33.61	15 2597
145	8.2	19.0	21.3	23.6	25.9	27.9	c	44 23.55	54 14	5.5	4.3	V	40.270	8 44 43.02	15 24 15.93	15 2599
146	8.9	26.1	28.0	30.4	32.5	34.7	c	45 30.35	54 14	"	"	III	43.940	8 45 49.82	15 25 24.61	15 2605
147	8.2	0.4	2.8	4.6	6.5	8.4	e	45 35.00	54 14	"	"	VII	44.540	8 45 54.47	15 25 39.14	15 2606
148	7.8	55.6	58.0	0.0	1.7	3.7	e	46 30.32	53 50	5.5	4.8	VII	43.550	8 46 49.84	15 1 19.67	14 2677
149	8.2	19.0	21.0	23.1	25.4	27.5	c	48 23.21	53 50	"	"	....	....	8 48 42.74	15 0 27	14 2691
150	8.2	......	8.7	10.4	12.4	14.2	e	48 40.93	53 50	"	"	V (B)	49.680	8 49 0.46	−15 0 4.33	−14 2695
151	8.7	13.8	16.2	18.2	20.5	22.6	c	50 18.27	52 50	5.5	4.8	V A	41.340	8 50 37.90	−14 3 47.62	−13 2711
152	7.7	50.8	53.0	54.8	56.7	58.6	e	50 25.43	52 50	"	"	VII	44.060	8 50 45.06	14 1 27.94	13 2713
153	8.5	54.8	56.4	58.4	0.7	3.0	c	54 58.67	52 52	5.5	4.6	V B	41.900	8 55 18.33	[13 59 34.63]	13 2736
154	8.2	32.2	34.4	36.5	38.6	40.9	c	56 36.52	52 52	"	"	V	39.250	8 56 56.19	14 1 57.20	13 2744
155	7.8	0.2	2.0	4.0	6.0	8.1	a	58 33.33	52 52	"	"	I	41.110	8 58 53.00	14 2 29.89	13 2751
156	8.0	2.5	4.1	6.2	8.1	10.4	a	0 35.56	53 0	5.5	4.4	I	41.530	9 0 55.23	14 10 38.91	14 2741
157	7.9	9.1	11.5	13.4	15.0	17.2	e	0 43.85	53 12	5.5	4.5	VII	44.750	9 1 3.50	14 23 45.79	14 2743
158	8.3	2.2	4.4	6.3	8.3	10.5	a	2 35.61	52 50	5.5	4.8	III	46.640	9 2 55.31	14 2 18.41	13 2769
159	8.1	9.0	11.1	13.3	15.5	17.6	c	7 13.31	53 40	5.5	4.2	V	44.990	9 7 32.96	14 51 52.45	14 2776
160	7.7	55.1	57.2	59.2	3.5	5.0	c_3 d_2	7 55.02	53 50	5.5	4.6	VI	40.560	9 8 14.66	−15 0 29.83	−14 2780
161	7.5	59.1	1.4	3.5	7.7	9.3	c_3 d_2	8 59.24	53 6	5.5	3.7	V	41.880	9 9 18.95	−14 16 51.91	−14 2786
162	7.0	21.5	23.6	25.9	30.0	31.6	c_3 d_2	10 21.55	53 26	5.5	3.8	V	40.720	9 10 41.24	14 36 31.35	14 2793
163	8.5	54.5	56.5	58.7	2.9	4.6	c_3 d_2	11 54.49	52 50	5.5	4.1	V	42.180	9 12 14.24	14 0 58.03	13 2807
164	8.2	53.5	55.9	57.7	59.5	1.6	e	12 28.29	52 50	"	"	V	41.970	9 12 48.04	14 0 54.23	13 2809
165	8.0	53.8	55.4	57.4	59.3	1.6	a	15 26.81	53 8	5.5	4.2	I	43.370	9 15 46.56	14 19 19.39	14 2824
166	8.4	37.6	39.7	41.7	44.0	46.0	c	15 41.81	53 38	5.5	4.2	V	41.980	9 16 1.52	14 48 57.96	14 2826
167	7.5	54.8	56.5	58.6	0.6	2.8	a	17 28.04	53 38	"	"	I	40.520	9 17 47.76	14 48 27.31	14 2835
168	8.3	16.0	17.9	19.8	22.0	24.0	a	18 49.30	53 28	5.5	4.6	I	45.830	9 19 9.04	14 40 8.52	14 2842
169	8.5	9.0	10.9	12.8	14.7	16.9	a	20 42.14	52 54	5.5	5.1	I	45.080	9 21 1.94	14 5 53.41	13 2851
170	8.0	3.8	5.5	7.4	9.2	11.5	a	21 36.76	52 54	"	"	I B	46.800	9 21 56.57	−14 3 14.20	−13 2855

Reduction Elements. Zones 14 and 15.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
February 16.3....	+0.236	+0.062	+0.581 +0.586	+0.225	+0.062	+0.621
16.5....	+0.214	.....	+0.771 (½ wt.)			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	53 Eridani		54 Eridani		β Leporis		κ Orionis		5 Monocerotis		θ Canis Majoris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	53 20 3.85		58 42 4.70		59 40 4.50		48 32 4.85		45 4 4.55		50 44 4.80	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	46.140	5 54.50	44.600	5 25.44	44.860	5 30.54	46.000	5 51.46		6 2.02		5 40.10
II Red. to Mer.	.030	1.67	.570	1.60	.830	1.59	45.950	1.70		1.74	45.430	1.70
VI Inclination	45.990		.440		.700		.760		46.440	2.04	.210	0.82
VII Refraction	.920	1 22.7	.360	1 41.2	.650	1 45.3	.730	1 9.8	.390	1 2.0	.150	1 15.5
	29 Canis Majoris		4 Navis		20 Navis		Bradley 1212		19 Hydrae		κ Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	63 10 5.00		53 8 4.65		54 18 5.10		46 28 8.70*		47 0 5.15		52 40 6.55	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	48.010	6 30.15	45.150	5 35.60		5 15.42	41.650	4 28.27		5 8.23	47.420	6 18.94
II Red. to Mer.	47.970	1.56	.110	1.67		1.66	.585	1.72	43.710	1.73		1.61
VI Inclination	.815		44.925		44.000	2.04	.370		.510	0.82		
VII Refraction	.780	2 2.0	.920	1 22.5	43.930	1 26.2	.340	1 5.3	.540	1 6.7	.190	1 21.6

* Microscope readings discordant.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
53 Eridani	4 33 16.01	11	+0.78	+3.26	53 27 22.7	38.9
54 Eridani	4 35 44.75	11	+0.84	+3.27	58 49 12.9	38.5
19 H. Camelopardalis	5 5 4.84	11	−0.68	[+3.45]	319 50	....
β Leporis	5 23 38.88	11	+0.85	+3.29	59 47 21.9	39.0
κ Orionis	5 42 40.54	11	+0.74	+3.32	48 39 7.8	40.1
5 Monocerotis	6 9 38.03	11	+0.71	+3.39	45 11 12.4	39.3
23 H. Camelopardalis	6 28 11.56	11	−0.75	[+3.49]	319 16	....
θ Canis Majoris	6 49 12.98	11	+0.76	+3.29	50 51 2.9	40.0
29 Canis Majoris	7 14 12.65	11	+0.89	+3.25	63 18 38.7	39.8
4 Navis	7 41 1.25	11	+0.78	+3.28	53 15 4.4	39.9
20 Navis	8 8 24.80	6	+0.80	+3.38	54 24 50.4	40.0
Bradley 1212	8 30 15.26	11	+0.72	+3.26	46 33 44.0	[39.3]
19 Hydrae	9 3 28.26	11	+0.73	+3.37	47 6 22.6	40.6
α Hydrae	9 22 20.09	11	+0.73	+3.34	47 2	....
κ Hydrae	9 35 10.87	11	+0.78	+3.25	52 47 48.7	40.4
Groombridge 1586	9 48 58.14	11	−0.26	[+2.90]	325 32	....

h		s
5.282	*dt*	+3.306
	Hourly rate	+0.0002
		° ′ ″
	Adopted Equator Point	38 56 39.68

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 28	30.125	28.9	26.4
5 5	30.115	26.2	25.5
5 35	30.135	25.9	25.5
6 50	30.145	25.6	25.1
8 10	30.145	24.6	23.7
9 5	30.145	22.7	21.8
9 40	30.145	22.3	21.5

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A*=*α* to 1900.0					*D*=Z. D. S. to 1894.0				
			52°	53°	54°	55°	56°	52°	53°	54°	55°	56°
°	s	h m	s	s	s	s	s	″	″	″	″	″
52	+0.772	4 30	+16.171	+16.031	+15.889	+15.745	+15.601	−1.95	−2.25	−2.54	−2.82	−3.09
53	0.781	5 0	15.945	15.799	15.652	15.505	15.354	1.64	1.91	2.19	2.46	2.73
54	0.791	5 30	15.758	15.608	15.459	15.307	15.153	1.40	1.66	1.92	2.19	2.44
55	0.800	6 0	15.611	15.462	15.312	15.159	15.004	1.26	1.51	1.75	1.99	2.22
56	+0.809	6 30	15.507	15.361	15.213	15.063	14.911	1.21	1.43	1.64	1.85	2.06
		7 0	15.451	15.309	15.165	15.019	14.872	1.26	1.46	1.64	1.80	2.00
		7 30	15.442	15.306	15.169	15.032	14.891	1.41	1.57	1.72	1.86	2.01
		8 0	15.478	15.353	15.224	15.096	14.967	1.64	1.76	1.87	1.98	2.09
		8 30	15.561	15.447	15.330	15.213	15.095	1.97	2.05	2.12	2.19	2.26
		9 0	15.686	15.587	15.484	15.382	15.278	2.38	2.43	2.46	2.48	2.52
		9 30	+15.860	+15.772	+15.685	+15.598	+15.509	−2.87	−2.86	−2.85	−2.84	−2.83

APPARENT RIGHT ASCENSION.	*R*				
	52°	53°	54°	55°	56°
h m	″	″	″	″	″
4 30	78.51	81.38	84.39	87.54	90.87
5 0	78.63	81.51	84.53	87.68	91.01
5 30	78.69	81.56	84.59	87.74	91.08
6 0	78.81	81.70	87.72	87.88	91.22
6 30	78.81	81.70	84.72	87.88	91.22
7 0	78.81	81.70	84.72	87.88	91.22
7 30	78.89	81.77	84.80	87.96	91.31
8 0	78.98	81.87	84.90	88.06	91.41
8 30	79.14	82.04	85.07	88.25	91.60
9 0	79.30	82.21	85.25	88.43	91.79
9 30	79.38	82.28	85.33	88.51	91.88

1894 FEBRUARY 20. ZONE 16. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	8.5	21.7	23.9	26.0	27.9	29.9	■	55 55.98	56 34	5.0	3.3	VII	44.940	4 56 17.53	−17 43 54.34	−17 1009
2	8.0	56.7	59.0	0.9	2.9	4.9	e	56 30.98	56 34	"	"	VII B	49.520	4 56 52.54	17 42 9.36	17 1011
3	8.2	30.6	32.9	34.8	36.7	38.7	e	0 5.09	54 58	5.0	2.1	V	47.480	5 0 26.84	16 8 38.06	16 1034
4	8.0	44.0	46.0	48.1	50.3	52.5	c	1 48.19	53 28	5.0	2.0	V B	45.290	5 2 10.15	14 34 40.76	14 1046
5	8.5	49.0	50.8	52.7	54.6	56.7	■	8 22.11	53 22	5.0	1.3	I	49.200	5 8 44.02	14 33 6.93	14 1071
6	7.8	45.4	47.2	49.2	51.0	53.5	a	9 18.78	54 36	5.0	2.0	III	44.360	5 9 40.52	15 45 40.76	15 977
7	8.8	13.5	15.3	17.3	19.3	21.5	a	10 46.86	54 20	5.0	2.4	III	41.620	5 11 8.64	15 28 48.81	15 988
8	7.6	28.8	30.9	33.0	35.3	37.5	c	11 33.11	53 8	5.0	1.3	VI	43.110	5 11 55.05	14 17 16.24	14 1083
9	7.2	44.0	46.6	48.6	50.5	......	e	13 18.73	55 8	5.0	2.5	V	43.970	5 13 40.38	16 17 38.82	16 1096
10	9.0	50.6	52.8	54.9	57.0	59.0	c	30 54.87	55 32	5.0	2.5	III B	46.210	5 31 16.36	−16 39 17.94	−16 1179
11	7.8	32.0	34.2	36.3	38.7	40.9	c	31 36.43	55 32	"	"	V A	46.310	5 31 57.90	−16 45 47.16	−16 1182
12	9.0	21.0	23.4	25.3	27.2	29.1	e	32 55.34	56 20	5.0	3.1	V	42.140	5 33 16.70	17 29 18.22	17 1191
13	......	55.5	57.2	59.0	1.0	3.3	a	35 28.93	56 0	5.0	2.6	I	42.710	5 35 50.33	17 9 25.66	17 1206
14	9.0	12.5	14.3	16.2	18.2	20.6	a	36 45.96	55 12	5.0	2.5	I	44.260	5 37 7.46	16 21 53.44	16 1206
15	9.2	2.6	4.7	6.9	9.0	11.3	c	37 6.91	54 46	5.0	1.3	V	48.510	5 37 28.47	15 57 16.15	15 1128
16	9.5	27.6	29.9	31.8	33.6	35.8	e	38 1.85	56 28	5.0	3.5	VII	47.040	5 38 23.16	17 38 56.20	17 1218
17	9.1	14.8	17.0	19.0	23.5	25.0	c_3 d_2	39 14.87	54 42	5.0	1.6	V	44.150	5 39 36.43	15 51 54.23	15 1140
18	7.0	30.6	32.8	35.0	37.0	39.0	c	42 34.89	54 6	5.0	1.6	III	48.580	5 42 56.53	15 17 17.04	15 1168
19	8.0	0.1	2.0	4.1	6.3	8.5	c	44 4.21	55 24	5.0	2.2	III A	46.830	5 44 25.65	16 38 1.58	16 1259
20	8.2	43.2	45.3	47.5	49.6	51.9	c	44 47.51	55 24	"	"	III B	46.880	5 45 8.96	−16 31 39.52	−16 1263
21	8.7	49.2	51.3	53.5	57.6	59.3	c_3 d_2	45 49.18	54 52	5.0	2.0	V	43.830	5 46 10.69	−16 1 52.29	−16 1271
22	8.3	42.0	44.3	46.4	48.7	50.7	c	47 46.43	54 0	5.0	0.3	V	45.880	5 48 8.06	−15 10 29.09	−15 1201

1894 FEBRUARY 20. ZONE 17. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

23	8.0	30.8	32.7	35.0	37.0	39.4	c	44 34.99	54 28	5.0	1.5	V	44.900	8 44 56.68	−15 39 37.41	−15 2600
24	8.6	18.7	20.5	22.5	24.5	26.6	a	46 51.87	53 6	5.0	1.0	I	42.080	8 47 13.71	14 16 37.00	14 2678
25	7.9	8.7	10.4	12.3	14.2	16.5	a	47 41.76	53 18	5.0	0.5	III	47.100	8 48 3.58	14 30 14.98	14 2688
26	8.2	16.7	18.6	20.9	23.0	25.3	c	48 20.91	53 50	5.0	1.2	V	41.240	8 48 42.68	15 0 27.18	14 2691
27	8.0	4.0	6.2	8.0	10.0	12.0	e	48 38.56	53 50	"	"	VII B	50.120	8 49 0.34	15 0 5.32	14 2695
28	7.6	47.6	49.5	51.7	54.0	56.0	c	50 51.77	53 50	"	"	III	50.400	8 51 13.56	15 3 20.88	14 2707
29	8.2	36.6	38.4	40.3	42.1	44.5	a	52 9.67	53 0	5.0	1.2	III	42.520	8 52 31.55	14 10 48.97	14 2709
30	8.5	54.7	56.5	58.7	0.9	3.0	c	52 58.77	53 24	5.0	0.9	III	44.210	8 53 20.62	14 35 22.43	14 2712
31	8.4	39.9	41.9	44.0	46.3	48.5	c	53 44.13	53 24	"	"	III	43.390	8 54 5.98	14 35 7.11	14 2715
32	8.0	33.2	35.5	37.6	39.9	42.0	c	54 37.65	53 24	"	"	III	48.360	8 54 59.50	−14 36 42.02	−14 2720
33	8.0	24.2	26.4	28.5	30.6	32.8	c	56 28.51	52 54	5.0	2.5	III	45.910	8 56 50.42	−14 5 55.46	−13 2743
34	8.7	59.8	2.0	4.0	5.8	7.6	e	56 34.49	52 54	"	"	VII B	43.380	8 56 56.41	14 1 57.98	13 2744
35	8.2	22.7	25.0	27.0	28.8	30.7	e	57 57.43	53 16	5.0	0.7	V	47.120	8 58 19.31	14 28 20.81	14 2732
36	8.8	32.6	34.8	36.8	38.7	40.7	e	59 7.26	53 36	5.0	1.6	VII	47.190	8 59 29.12	14 48 25.42	14 2737
37	8.3	14.4	16.4	18.6	20.8	23.0	c	1 18.65	54 32	5.0	1.6	V	42.730	9 1 40.44	15 43 2.57	15 2698
38	9.0	32.5	34.8	36.6	38.4	40.6	e	5 7.18	53 14	5.0	1.0	V	41.840	9 5 29.12	−14 24 42.92	−14 2767

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
39	8.9	44.5	46.4	48.4	50.3	52.4	a	8 17.71	53 6 5.0 0.5	I 43.180	9 8 39.67	−14 17 5.45	−14 2781
40	7.8	1.3	3.3	5.3	7.2	9.4	a	9 34.64	53 20 5.0 1.5	I 45.830	9 9 56.59	14 31 57.50	14 2789
41	8.5	42.8	44.9	46.9	49.2	51.3	c	9 47.03	53 20 " "	III B 39.640	9 10 8.99	14 26 49.23	14 2790
42	8.6	55.6	57.9	59.8	1.8	3.8	e	10 30.31	53 44 5.0 1.7	V 46.100	9 10 52.23	−14 56 7.65	−14 2794
43	6.5	56.7	59.0	1.0	3.2	5.2	c	12 1.03	52 58 5.0 1.9	III 43.810	9 12 23.03	−14 9 20.86	−13 2808
44	9.0	13.2	15.1	17.5	19.7	21.9	c	13 17.49	53 52 5.0 1.5	III 46.190	9 13 39.42	15 4 8.96	14 2811
45	8.4	12.3	14.3	16.0	18.0	20.2	a	14 45.48	53 10 5.0 1.1	I 44.860	9 15 7.48	14 21 40.11	14 2819
46	6.7	16.2	18.0	19.9	22.0	24.2	a	15 49.49	54 0 5.0 1.5	I 43.990	9 16 11.42	15 11 26.52	14 2828
47	8.9	18.2	20.5	22.4	24.3	26.3	e	15 52.86	53(50) 5.0 1.6	VII 45.340	9 16 14.80	15 1 56.66	14 2830
48	8.2	30.9	32.6	34.8	39.3	40.8	c_3 d_2	17 30.70	53 56 5.0 1.2	V 43.180	9 17 52.65	15 7 14.75	14 2837
49	8.0	15.4	17.6	19.8	21.5	23.5	e	17 50.07	53 56 " "	VII 43.010	9 18 12.02	15 7 13.06	14 2840
50	8.8	11.8	13.9	16.0	18.3	20.4	c	20 16.09	53 0 5.0 1.9	V 45.990	9 20 38.14	14 12 6.77	14 2846
51	9.0	57.9	0.3	2.0	4.0	5.9	e	20 32.65	53 0 " "	VII A 41.280	9 20 54.70	14 13 51.54	14 2850
52	9.5	6.9	8.8	11.0	13.2	15.5	c	24 11.09	55 24 5.0 1.9	V 47.560	9 24 32.97	−16 36 45.12	−16 2800
53	8.0	22.9	25.0	27.0	29.0	31.0	a	25 56.30	53 10 5.0 1.0	I 47.780	9 26 18.37	−14 22 39.27	−14 2872
54	8.5	15.5	17.4	19.3	21.3	23.5	a	26 48.72	53 10 " "	I B 47.170	9 27 10.80	14 19 15.66	14 2876
55	9.0	22.5	24.2	26.3	28.3	30.4	a	27 55.61	52 50 5.0 2.5	I 43.600	9 28 17.72	14 1 20.10	13 2878
56	8.7	21.7	23.8	25.9	28.0	30.2	c	28 25.93	53 48 5.0 1.1	V 44.930	9 28 47.97	14 59 51.10	14 2883
57	8.8	0.8	2.8	5.0	7.2	9.3	c	29 5.03	53 48 " "	V B 44.210	9 29 27.08	14 56 25.20	14 2886
58	8.0	49.9	52.0	54.0	56.2	58.4	c	30 54.11	53 26 5.0 1.5	V 41.200	9 31 16.20	14 36 39.98	14 2895
59	7.8	5.4	7.4	9.6	11.8	13.8	c	32 9.61	53 12 5.0 1.2	III 45.850	9 32 31.72	14 24 6.42	14 2904
60	8.8	47.0	48.9	51.0	52.7	54.9	a	33 20.33	54 0 5.0 1.2	III 41.570	9 33 42.39	15 10 47.65	14 2907
61	8.2	15.4	17.5	19.6	21.8	24.0	c	37 19.67	53 20 4.4 0.2	III 45.050	9 37 41.82	14 31 52.31	14 2925
62	7.9	48.7	50.9	52.7	54.6	56.7	e	37 23.31	53 20 " "	VII A 41.020	9 37 45.46	−14 33 51.57	−14 2927
63	8.0	7.3	9.3	11.2	13.0	15.4	a	39 40.87	55 22 5.0 1.0	III 43.000	9 40 2.89	−16 33 20.88	−16 2877
64	9.0	55.6	57.8	59.6	2.0	4.0	c	39 59.81	55 22 " "	III B 45.040	9 40 21.83	16 30 47.48	16 2880
65	7.8	0.1	2.2	4.4	6.5	8.8	c	41 4.41	52 54 5.0 2.0	V 50.720	9 41 26.61	14 7 42.88	13 2946
66	9.0	42.7	44.9	46.7	48.7	50.7	e	41 17.39	52 54 " "	VII B 50.140	9 41 39.60	14 4 20.91	13 2948
67	8.9	7.6	9.8	11.6	13.5	15.5	e	43 41.92	55 14 5.0 2.3	V 41.140	9 44 3.98	16 24 48.48	16 2892
68	8.6	2.4	4.4	6.7	8.9	10.9	c	45 6.67	53 42 5.0 1.0	V 45.310	9 45 28.86	14 54 2.88	14 2957
69	8.4	49.9	51.9	54.0	55.7	58.0	a	46 23.29	53 42 " "	III 48.200	9 46 45.48	14 54 56.61	14 2964
70	8.5	39.9	42.0	43.8	45.8	48.0	a	47 13.29	53 42 " "	III 41.630	9 47 35.48	14 52 51.77	14 2970
71	8.8	14.9	16.7	18.5	20.6	22.7	a	48 47.97	52 56 5.0 2.5	I A 42.270	9 49 10.23	14 10 14.30	13 2976
72	8.8	6.5	8.5	10.3	12.4	14.6	a	49 39.75	52 56 " "	I A 42.040	9 50 2.02	−14 10 10.16	−13 2980
73	8.8	18.0	20.0	22.0	24.4	26.6	c	54 22.21	53 16 5.0 1.3	V 46.940	9 54 44.50	−14 28 35.25	−14 2992
74	7.9	20.0	21.9	24.0	26.0	28.0	a	56 53.32	53 20 5.0 2.2	I A 37.550	9 57 15.62	14 32 47.57	14 3005
75	8.3	58.9	0.9	3.0	5.2	7.4	c	57 3.09	53 20 " "	V 35.260	9 57 25.40	−14 25 41.83	−14 3007

Reduction Elements. Zones 16 and 17.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
February 20.3....	+0.281	−0.093	+0.376	+0.272	−0.079	+0.438
20.5....	+0.263	−0.065	+0.434			
			+0.505			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	60 Eridani		64 Eridani		α Leporis		η Leporis		6 Hydrae		Lalande 17333	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	55 14 3.65		51 32 3.60		56 44 3.80		53 2 2.90		50 56 3.60		57 12 3.40	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.306	5 19.19	43.330	5 1.15	43.450	5 2.96	41.905	4 33.08	44.760	5 27.92	44.350	5 18.89
II Red. to Mer.	.260	1.65	.300	1.68	.400	1.63	.830	1.67	.740	1.69	.210	1.63
VI Inclination	.050		.140		.230		.600		.580		.040	
VII Refraction	.042	1 25.1	.090	1 14.4	.160	1 30.0	.620	1 18.5	.460	1 13.1	43.990	1 32.0

	19 Hydrae		α Hydrae		κ Hydrae		υ^2 Hydrae		22 Sextantis		μ Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	47 0 3.20		47 2 3.50		52 40 2.50		51 22 3.00		46 22 3.35		55 8 3.30	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.070	5 14.66		5 30.83	47.920	6 28.02	47.995	6 28.94	46.520	6 1.19	43.175	4 58.00
II Red. to Mer.	.010	1.72		1.72	.850	1.67	.910	1.69	.430	1.73	.155	1.65
VI Inclination	43.820		44.800	2.04	.710		.720		.290		42.950	
VII Refraction	.800	1 3.7	.750	1 3.9	.650	1 18.0	.700	1 14.5	.250	1 2.5	.915	1 25.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
60 Eridani	4 45 19.46	11	+0.61	+5.43	55 20 49.6	40.8
64 Eridani	4 54 54.54	11	+0.58	+5.69	51 38 20.8	40.8
19 H. Camelopardalis	5 5 1.75	10	−0.38	[+5.86]	319 50	....
α Leporis	5 27 57.77	11	+0.63	+5.64	56 50 38.4	41.0
η Leporis	5 51 29.25	11	+0.59	+5.63	53 7 56.1	39.8
Groombridge 1446	8 27 55.61	11	−0.16	[+5.80]	324 56	....
6 Hydræ	8 34 55.16	11	+0.58	+5.78	51 2 46.3	40.9
Lalande 17333	8 41 50.55	11	+0.63	+5.83	57 18 55.9	41.7
19 Hydrae	9 3 26.05	11	+0.54	+5.78	47 6 23.3	40.9
α Hydrae	9 22 17.82	11	+0.55	+5.80	47 8 42.0	41.3
κ Hydrae	9 35 8.63	11	+0.59	+5.69	52 47 50.2	41.2
υ² Hydrae	9 59 52.91	11	+0.58	+5.73	51 29 48.1	41.4
λ Hydrae	10 5 20.24	11	+0.57	+5.84	50 44	....
22 Sextantis	10 12 16.95	11	+0.54	+5.76	46 29 8.8	41.8
30 H. Camelopardalis	10 18 19.63	9	−0.75	[+5.34]	315 50	....
μ Hydrae	10 20 52.87	11	+0.61	+5.76	55 14 28.4	41.1

h 5.252 .... dt .... s +5.598

Hourly rate .... +0.0410

Adopted Equator Point ....38° 56′ 41.″06

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 48	29.905	45.0	42.1
5 56	29.865	41.9	41.0
8 36	29.815	39.7	38.4
10 4	29.785	38.7	36.7
10 24	29.785	38.2	36.5

Notes.

8, 9, 52. Clouds.

49. Close companion preceding, same δ.

73. Faint companion n. p.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	+0.583	4 30	+16.233	+16.093	+15.951	+15.809	+15.664	+15.521
53	0.592	5 0	16.006	15.861	15.713	15.566	15.417	15.265
54	0.601	5 30	15.815	15.667	15.517	15.367	15.214	15.059
55	0.610	6 0	15.665	15.516	15.366	15.215	15.060	14.906
56	0.619	8 30	15.572	15.459	15.344	15.226	15.109	14.988
57	+0.628	9 0	15.686	15.587	15.485	15.382	15.278	15.173
		9 30	15.845	15.759	15.672	15.586	15.497	+15.408
		10 0	+16.041	+15.972	+15.902	+15.832	+15.762	......

APPARENT RIGHT ASCENSION.	$D=$ Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52°	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
4 30	−1.98	−2.27	−2.56	−2.84	−3.13	−3.40	75.32	78.07	80.97	83.98	87.18	90.51
5 0	1.72	2.01	2.29	2.57	2.84	3.11	75.37	78.13	81.02	84.04	87.24	90.57
5 30	1.55	1.82	2.09	2.35	2.61	2.87	75.42	78.18	81.08	84.10	87.30	90.64
6 0	1.48	1.74	1.98	2.23	2.47	2.71	75.46	78.22	81.11	84.14	87.34	90.68
8 30	2.50	2.60	2.69	2.78	2.87	2.98	75.70	78.47	81.38	84.41	87.62	90.97
9 0	2.98	3.03	3.09	3.15	3.20	3.25	75.77	78.54	81.45	84.49	87.70	91.05
9 30	3.50	3.52	3.53	3.53	3.55	3.56	75.84	78.61	81.53	84.57	87.78	91.14
10 0	−4.06	−4.05	−4.02	−3.94	−3.93	−3.90	75.91	78.69	81.60	84.64	87.86	91.22

1894 MARCH 1. ZONE 18. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″			r	h m s	° ′ ″	°
1	......	11.9	13.6	15.5	17.5	19.7	a	33 45.34	55 50	5.0	4.8		I	39.560	5 34 10.38	−16 58 23.27	−17 1196
2	8.1	52.4	54.5	56.7	58.9	1.0	c	36 56.71	54 30	5.0	3.5		V	46.480	5 37 21.91	15 40 35.66	15 1126
3	7.9	8.9	11.0	13.0	15.0	16.9	e	37 43.17	55 54	5.0	3.9		VII	43.910	5 38 8.17	17 3 52.79	17 1215
4	9.0	27.6	29.3	31.3	33.1	35.3	a	41 0.85	54 40	5.0	3.5		I	44.640	5 41 26.01	15 49 59.80	15 1157
5	8.8	4.8	7.0	9.2	11.4	13.6	c	41 9.21	54 40	"	"		III A	43.980	5 41 34.36	15 53 2.23	15 1158
6	8.5	28.5	30.6	32.7	35.0	37.2	c	44 32.81	56 26	5.0	3.6		III	46.600	5 44 57.70	17 36 45.95	17 1253
7	9.1	27.9	30.0	32.0	33.9	35.9	e	45 2.25	55 16	5.0	3.4		V	45.290	5 45 27.30	−16 26 19.39	−16 1265

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
8	9.4	26.8	28.9	31.0	33.3	35.5	c	46 31.11	53	28	5.0	2.0	V	48.710	5 46 56.40	−14 39 19.67	−14 1261
9	7.0	55.7	57.4	59.3	1.2	3.4	a	49 28.91	54	34	5.0	3.5	III	47.605	5 49 54.03	15 45 2.23	15 1212
10	8.8	20.9	22.5	24.7	26.7	28.8	a	50 54.40	55	36	5.0	3.4	I A	46.170	5 51 19.36	−16 49 49.98	−16 1301
11	8.2	15.7	17.8	20.0	22.0	24.2	c	51 19.91	55	36	"	"	III B	49.050	5 51 44.88	−16 44 21.27	−16 1302
12	6.8	11.0	13.0	14.9	16.9	19.0	a	52 44.84	56	54	6.0	5.5	III	43.700	5 53 9.61	18 3 58.00	18 1247
13	8.2	21.7	24.0	26.0	28.1	30.4	c	53 26.05	56	54	"	"	V B	40.520	5 53 50.82	17 59 47.05	18 1254
14	8.9	26.9	28.6	30.5	32.5	34.7	a	56 0.15	54	32	5.0	3.1	I	48.190	5 56 25.24	15 43 14.70	15 1243
15	7.0	7.8	9.5	11.4	13.5	15.7	a	56 41.19	55	14	5.0	3.2	III	44.105	5 57 6.18	16 24 0.94	16 1333
16	7.8	50.8	52.7	54.7	56.6	58.7	a	58 24.26	54	52	5.0	2.5	I	45.380	5 58 49.29	16 2 23.09	16 1343
17	8.0	38.1	40.0	41.9	43.8	45.8	■	59 11.42	54	30	5.0	2.5	III	46.010	5 59 36.50	15 40 36.31	15 1261
18	6.3	2.1	4.3	6.4	8.5	10.8	c	0 6.43	55	18	5.0	3.2	III	45.940	6 0 31.39	16 28 38.08	16 1349
19	8.9	48.4	50.5	52.7	55.1	57.2	c	0 52.79	55	18	"	"	V A	44.130	6 1 17.74	16 31 18.64	16 1352
20	6.9	41.6	43.9	46.0	48.1	50.4	c	1 46.01	55	18	"	"	III A	41.200	6 2 10.96	−16 30 21.85	−16 1357
21	8.6	12.8	15.3	17.0	19.0	20.9	e	1 47.31	55	18	"	"	VII B	48.220	6 2 12.27	−16 26 12.96	−16 1358
22	7.8	8.2	10.3	12.3	14.5	16.6	c	4 12.39	54	30	5.0	2.5	V	47.290	6 4 37.44	15 41 4.97	15 1280
23	7.3	15.9	17.9	20.1	22.4	24.4	c	5 20.15	53	52	5.0	2.1	III	45.230	6 5 45.29	15 2 22.80	15 1292
24	7.0	53.7	55.7	57.6	59.6	1.6	a	6 27.16	54	36	5.0	2.2	III	44.340	6 6 52.19	[15 46 8.49]	15 1299
25	9.0	35.4	37.5	39.6	41.7	43.9	c	6 39.63	54	36	"	"	III A	41.290	6 7 4.66	15 48 23.64	15 1301
26	8.0	6.8	8.8	10.7	12.8	14.7	e	12 41.22	54	14	5.0	2.2	VII	46.200	6 13 6.28	15 24 49.23	15 1335
27	7.9	0.0	2.1	4.2	6.2	8.5	c	14 4.21	54	14	"	"	III B	46.820	6 14 29.27	15 21 46.36	15 1342
28	......	52.9	55.1	57.0	1.4	2.7	c_3 d_2	14 52.84	53	52	5.0	2.4	V	42.015	6 15 17.94	15 1 28.38	15 1346
29	8.7	18.7	20.7	22.6	24.6	26.7	a	16 52.07	53	52	"	"	I	49.010	6 17 17.16	15 3 39.13	15 1360
30	8.5	38.7	40.4	42.4	44.4	46.6	a	18 11.91	53	52	"	"	I (A)	41.880	6 18 36.99	−15 4 37.33	−15 1364
31	8.0	12.1	13.9	15.9	17.9	20.0	a	19 45.45	54	24	5.0	3.0	I	49.240	6 20 10.45	−15 35 46.78	−15 1373
32	7.9	8.3	10.4	12.5	14.7	16.8	c	20 12.55	53	10	5.0	2.5	III	48.570	6 20 37.72	14 21 32.54	14 1436
33	7.9	10.6	12.8	15.1	17.3	19.2	c	21 15.01	54	24	5.0	3.0	(III)	43.380	6 21 40.01	15 33 57.82	15 1382
34	7.3	51.2	53.3	55.3	57.1	59.1	e	22 25.68	54	4	5.0	1.5	VII	47.460	6 22 50.72	15 15 17.52	15 1388
35	7.3	7.6	9.3	11.2	13.2	15.4	a	22 40.78	54	4	"	"	III	45.760	6 23 5.82	15 14 42.22	15 1390
36	8.3	54.7	57.1	58.7	0.8	2.8	e	23 29.30	54	4	"	"	VII A	47.180	6 23 54.33	15 18 25.61	15 1396
37	8.6	42.1	44.7	46.6	48.5	50.5	e	26 16.76	55	24	5.0	2.8	VII A	44.560	6 26 41.60	16 37 41.57	16 1509
38	8.6	12.8	14.9	17.1	19.2	21.4	c	26 17.09	55	24	"	"	V	44.060	6 26 41.94	16 34 17.76	16 1508
39	9.2	13.7	15.6	17.5	19.4	21.7	a	29 47.04	54	12	5.0	2.7	I	45.510	6 30 12.04	15 22 40.30	15 1435
40	9.0	21.6	23.6	25.8	28.0	30.1	c	30 25.83	55	46	5.0	2.8	III	44.710	6 30 50.61	−16 56 31.73	−16 1536
41	8.6	1.7	3.6	5.9	8.0	10.2	c	31 5.89	55	32	5.0	2.8	V	47.120	6 31 30.70	−16 43 18.91	−16 1537
42	8.4	11.3	13.4	15.5	17.7	19.8	c	32 15.55	54	12	5.0	2.6	III A	41.960	6 32 40.54	15 24 48.88	15 1454
43	9.0	41.7	43.8	46.1	50.1	51.8	c_3 d_2	32 41.72	54	12	"	"	V B	42.370	6 33 6.71	15 18 33.05	15 1456
44	8.3	55.4	57.5	59.2	1.1	3.4	a	34 28.87	54	52	5.0	2.0	I	43.450	6 34 53.76	16 2 5.04	15 1464
45	8.7	56.1	57.8	59.8	1.6	3.9	a	35 29.36	54	34	5.0	2.6	III	48.340	6 35 54.28	15 45 39.91	15 1467
46	7.5	31.8	33.6	35.5	37.5	39.7	a	37 5.16	54	44	5.0	2.2	I	45.210	6 37 30.06	15 54 39.63	15 1478
47	8.0	44.7	46.2	48.2	50.2	52.3	a	38 17.83	54	34	5.0	2.7	I	43.320	6 38 42.75	15 44 4.03	15 1484
48	8.7	25.2	27.0	29.0	31.0	33 0	a	39 58.80	56	10	5.0	3.4	I	42.230	6 40 23.49	17 19 49.16	17 1605
49	8.8	36.1	38.0	39.9	41.9	43.9	a	41 9.25	53	2	5.0	1.5	I	42.550	6 41 34.37	14 11 46.17	14 1575
50	8.0	36.9	39.1	41.0	42.9	44.9	e	41 11.41	54	18	5.0	2.5	V	46.410	6 41 36.36	−15 29 6.97	−15 1504
51	7.4	41.3	43.4	45.8	47.6	49.9	c	42 45.61	56	12	5.0	3.4	III	48.720	6 43 10.29	−17 23 56.07	−17 1626
52	9.0	40.1	42.1	44.0	46.0	48.1	a	44 13.50	54	6	5.0	2.0	I	42.000	6 44 38.47	15 15 40.34	15 1522
53	7.3	33.6	35.6	37.5	39.4	41.6	a	45 6.86	53	8	5.0	2.2	III	46.470	6 45 31.95	14 19 5.23	14 1605
54	9.6	26.9	29.0	31.0	33.1	35.4	c	46 31.09	54	30	5.0	2.2	V	43.080	6 46 56.00	15 40 6.82	15 1542
55	8.6	7.2	9.7	11.5	13.5	15.6	e	46 41.92	54	30	"	"	VII A	40.760	6 47 6.82	15 42 36.95	15 1543
56	8.7	42.7	44.8	46.7	48.5	50.6	e	49 17.11	54	18	5.0	2.5	VII	42.860	6 49 42.04	15 28 5.01	15 1556
57	8.6	7.0	9.1	11.0	13.0	14.8	e	52 41.61	53	0	5.0	2.2	V	42.410	6 53 6.71	14 9 53.10	14 1661
58	7.5	54.7	57.1	59.1	0.8	2.7	e	53 29.27	54	44	5.0	1.9	VII	46.100	6 53 54.13	15 55 9.71	15 1581
59	8.8	55.7	58.1	59.8	1.7	3.7	e	54 30.20	54	44	"	"	VII B	41.640	6 54 54.97	15 50 32.87	15 1589
60	7.6	7.2	9.6	11.4	13.3	15.3	e	55 41.84	54	0	5.0	1.6	VII A	49.650	6 56 6.78	−15 15 29.08	−15 1599
61	8.9	19.4	21.6	23.8	26.0	28.2	c	57 23.81	54	0	"	"	V	44.140	6 57 48.76	−15 10 30.75	−15 1612
62	8.0	10.7	12.9	15.1	17.2	19.3	c	59 15.05	54	0	"	"	V	44.560	6 59 40.00	15 10 39.69	15 1629
63	7.9	58.3	0.5	2.5	4.9	6.9	c	0 2.63	54	0	"	"	III A	45.680	7 0 27.57	15 14 12.90	15 1636
64	9.5	5.2	7.2	9.2	13.6	15.1	c_3 d_2	1 5.07	54	44	5.0	2.2	V	43.010	7 1 29.92	[15 54 13.46]	15 1643[1]
65	8.3	2.8	5.0	7.1	9.2	11.4	c	2 7.11	53	54	5.0	2.0	V	43.675	7 2 32.07	15 4 24.23	15 1651
66	7.0	56.1	58.2	0.3	4.6	6.1	c_3 d_2	2 56.07	54	22	5.0	3.5	V	44.065	7 3 20.97	15 32 34.08	15 1657
67	8.3	47.5	49.9	51.6	53.5	55.6	e	3 22.07	54	22	"	"	VII B	49.690	7 3 46.97	15 31 10.37	15 1662
68	8.8	3.8	6.3	8.0	9.7	11.7	e	4 38.47	53	26	5.0	1.5	VII	46.540	7 5 3.49	14 37 20.01	14 1738
69	7.9	48.4	50.7	52.5	54.3	56.4	e	5 23.03	53	26	"	"	VII	42.910	7 5 48.05	14 36 11.28	14 1744
70	8.5	14.0	16.1	18.3	20.3	22.5	c	7 18.25	54	20	5.0	2.5	III	47.060	7 7 43.13	−15 31 31.06	−15 1694
71	7.8	45.5	47.4	49.3	51.2	53.6	a	8 18.73	53	14	5.0	1.6	III	44.290	7 8 43.77	−14 24 35.43	−14 1776
72	8.6	52.8	54.6	56.5	58.6	0.8	a	9 26.11	54	10	5.0	2.5	I	44.920	7 9 51.02	15 20 49.11	15 1714
73	8.7	31.6	33.8	35.9	38.2	40.2	c	9 35.95	54	10	"	"	III B	47.690	7 10 0.87	15 18 31.42	15 1718
74	7.9	16.3	18.6	20.4	22.2	24.3	e	9 50.84	54	10	"	"	V (B)	46.220	7 10 15.76	15 18 5.12	15 1720
75	8.5	13.0	14.9	16.7	18.6	20.7	a	12 46.17	53	38	5.0	1.2	III	46.590	7 13 11.15	14 49 22.29	14 1816
76	8.5	8.8	10.5	12.6	14.5	16.6	a	16 42.04	54	6	5.0	1.3	I	44.060	7 17 6.95	15 16 35.56	15 1778
77	8.8	41.6	43.7	46.0	48.0	50.3	c	16 45.93	54	6	"	"	III A	41.880	7 17 10.83	15 19 8.99	15 1780
78	8.8	29.8	31.9	34.2	36.4	38.6	c	17 34.19	54	6	"	"	III B	47.850	7 17 59.10	15 14 37.61	15 1788
79	8.9	54.0	55.9	58.0	59.9	2.1	a	19 27.51	54	42	5.0	2.1	I	42.180	7 19 52.34	15 52 3.16	15 1805
80	9.2	23.3	25.0	27.1	29.1	31.2	a	19 56.66	54	42	"	"	I B	41.250	7 20 21.50	−15 48 33.46	−15 1811

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
81	8.5	52.8	55.0	57.1	59.4	1.5	c	22 57.17	54 0 5.0 1.5	V 44.700	7 23 22.09	−15 10 54.05	−15 1839
82	8.2	36.4	38.3	40.3	42.1	44.2	a	25 9.75	54 24 5.0 2.5	I 46.530	7 25 34.62	15 35 28.10	15 1862
83	7.9	16.7	18.8	21.1	23.1	25.3	c	25 21.01	54 24 " "	III A 45.650	7 25 45.87	15 38 26.36	15 1865
84	8.1	26.8	28.6	30.6	32.5	34.7	a	26 59.97	53 16 5.0 2.0	I 45.140	7 27 24.98	14 26 59.12	14 1950
85	8.8	5.9	7.8	9.7	11.6	13.8	a	28 39.05	53 4 5.0 1.3	I B 46.150	7 29 4.09	14 12 6.13	14 1969
86	6.0	42.9	45 1	47.1	49.2	51.5	c	28 47.17	53 4 " "	III A 45.840	7 29 12.19	14 18 27.44	14 1971
87	8.6	2.7	4.5	6.1	8.4	10.5	a	30 35.77	53 16 5.0 1.7	I 45.050	7 31 0.78	14 26 59.08	14 1987
88	7.8	23.2	25.0	27.1	28.9	31.3	a	30 56.44	53 16 " "	I A 42.420	7 31 21.44	14 29 22.40	14 1994
89	7.7	3.4	5.6	7.7	9.9	12.1	c	31 7.75	53 16 " "	III A 39.780	7 31 32.75	14 28 33.91	14 2001
90	8.7	46.5	48.9	50.6	52.5	54.7	e	31 21.23	53 16 " "	VII A 47.620	7 31 46.23	−14 31 6.09	−14 2013
91	9.0	17.0	18.9	20.7	22.8	24.9	a	34 50.13	52 48 5.0 2.2	I 48.150	7 35 15.19	−13 59 59.12	−13 2160
92	7.8	37.5	39.9	41.7	43.7	45.5	e	42 12.12	54 14 5.0 2.1	VII 41.910	7 42 37.01	15 24 12.49	15 2043
93	9.2	57.1	59.4	1.5	3.1	5.1	e	42 31.70	54 14 " "	VII 39.870	7 42 56.60	15 23 33.82	15 2048
94	8.0	57.6	59.7	1 7	3.9	6.0	c	45 1.79	53 58 5.0 2.2	V 46.230	7 45 26.72	15 9 33.90	15 2075
95	8.8	11.6	14.0	15.8	17.7	19.7	e	48 46.15	54 42 5.0 2.5	VII 46.250	7 49 10.99	15 53 39.66	15 2114
96	8.7	12.9	14.9	17.1	21.4	23.0	c_3 d_2	50 12.88	54 10 5.0 2.1	V 42.460	7 50 37.79	−15 20 25.04	−15 2127

1894 MARCH 1. ZONE 19. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

97	8.0	48.4	50.0	51.9	53.9	56.0	a	3 21.43	53 44 5.0 1.2	I B 45.720	8 3 46.40	−14 52 15.65	−14 2385
98	7.8	25.4	27.6	29.7	31.9	34.0	c	3 29.73	53 44 " "	III 46.680	8 3 54.70	14 55 48.05	14 2387
99	8.2	58.3	0.5	2.7	4.9	7.0	c	5 2.69	54 14 5.0 2.1	III 42.030	8 5 27.60	15 24 22.07	15 2288
100	8.2	31.0	33.0	34.7	36.6	38.8	a	7 4.27	54 14 " "	I B 42.735	8 7 29.20	15 21 22.32	15 2309
101	8.2	1.3	3.3	5.5	7.8	9.9	c	7 5.57	54 14 " "	III B 43.360	8 7 30.50	15 21 35.97	15 2310
102	6.0	15.0	17.0	19.3	21.4	23.5	c	8 19.25	54 14 " "	III A 47.050	8 8 44.16	15 29 12.17	15 2324
103	8.8	24.0	26.0	28.0	30.4	32.5	c	9 28.19	54 14 " "	III A 44.200	8 9 53.11	15 28 18.41	15 2337
104	9.2	32.0	34.0	36.0	38.0	40.7	c	10 36.15	54 48 5.0 2.1	III A 44.690	8 11 1.01	16 2 29.88	15 2347
105	7.2	24.4	26.6	28.7	30.9	33.0	c	11 28.73	54 48 " "	III 49.070	8 11 53.59	16 0 40.51	15 2356
106	9.0	48.5	50.7	52.7	54.6	56.9	c	11 52.69	54 48 " "	V B (43).470	8 12 17.56	−15 55 43.31	−15 2357
107	7.0	18.9	21.0	23.0	25.4	27.5	c	12 23.17	54 48 " "	V 42.100	8 12 48.04	−15 58 29.86	−15 2362
108	9.2	49.7	51.4	53.4	55.4	57.4	a	15 23.00	54 46 5.0 1.3	I 45.330	8 15 47.88	15 57 28.81	15 2383
109	8.7	45.0	47.0	48.8	50.9	53.0	a	16 18.34	53 44 5.0 1.6	III 47.520	8 16 43.33	14 56 9.81	14 2484
110	8.6	58.8	1.2	3.0	4.8	6.7	e	16 33.40	53 56 5.0 1.6	VII 42.620	8 16 58.37	15 6 40.26	14 2487
111	8.7	47.6	49.7	51.7	54.0	56.0	c	17 51.81	54 38 5.0 1.6	V 42.400	8 18 16.71	15 48 37.18	15 2406
112	8.0	13.5	15.3	17.3	19.2	21.5	a	19 46.70	53 20 5.0 2.1	I 43.460	8 20 11.75	14 30 51.31	14 2508
113	8.3	40.2	42.0	43.9	45.9	48.2	a	21 13.55	54 32 5.0 1.7	I 47.060	8 21 38.47	15 44 3.60	15 2432
114	9.0	13.6	15.5	17.3	19.3	21.4	a	21 46.93	54 32 " "	I 47.820	8 22 11.85	15 44 18.29	15 2439
115	8.8	11.0	13.5	15.4	17.0	19.0	e	21 45.66	54 4 5.0 1.1	VII 44.600	8 22 10.63	15 15 20.25	15 2438
116	7.7	14.8	16.5	18.5	20.5	22.8	a	23 48.13	54 32 5.0 1.9	III 46.580	8 24 13.06	−15 43 57.46	−15 2452
117	8.6	1.0	3.0	4.9	6.8	9.0	a	24 34.44	54 32 " "	III B 44.480	8 24 59.38	−15 40 5.47	−15 2458
118	8.5	43.8	45.6	47.8	50.0	52.0	c	28 47.85	53 34 5.0 1.1	V 41.560	8 29 12.90	14 44 22.46	14 2573
119	7.9	14.5	16.5	18.6	20.8	23.0	c	30 18.69	53 40 5.0 2.3	V 47.610	8 30 43.73	14 52 19.09	14 2579
120	7.7	7.0	9.0	11.0	13.3	15.6	c	31 11.19	53 40 " "	III B 40.060	8 31 36.24	14 46 41.78	14 2583
121	8.2	54.0	56.4	58.3	0.3	2.0	e	31 28.82	53 4 4.0 0.7	VII 46.510	8 31 53.92	14 15 57.15	14 2586
122	7.9	4.9	6.6	8.4	10.5	12.8	a	33 37.95	53 10 4.0 1.8	I 47.940	8 34 3.05	14 22 21.16	14 2596
123	8.1	46.0	48.2	50.3	52.6	54.7	c	33 50.37	53 10 " "	III B 48.480	8 34 15.48	14 19 21.01	14 2597
124	7.8	45.5	47.2	49.3	51.0	53.2	a	35 18.56	53 10 " "	III B 52.280	8 35 43.67	14 20 33.91	14 2611
125	8.2	53.3	55.3	57.5	59.7	1.7	c	35 57.51	53 18 4.0 0.5	V 46.980	8 36 22.60	14 30 6.94	14 2615
126	9.5	37.8	39.9	41.9	44.2	46.3	c	37 42.03	54 12 5.0 1.9	VI 42.120	8 38 7.04	−15 22 39.59	−15 2559
127	8.9	32.8	34.5	36.3	38.4	40.6	a	40 6.01	54 24 5.0 1.6	I 46.860	8 40 31.01	−15 36 6.99	−15 2577
128	9.3	31.2	33.0	35.0	37.0	39.2	a	41 4.62	54 44 5.0 2.1	I 45.690	8 41 29.58	15 55 46.31	15 2583
129	9.5	46.0	47.9	49.9	51.8	54.0	a	43 19.50	55 6 5.0 2.0	III 47.480	8 43 44.43	16 18 24.13	16 2593[1]
130	9.5	15.8	17.8	20.0	22.0	24.4	c	43 20.01	55 6 " "	V 47.410	8 43 44.94	16 18 24.44	16 2593[2]
131	8.8	15.0	17.4	19.7	22.0	24.0	c	45 19.63	54 30 5.0 2.8	III 43.990	8 45 44.63	15 41 17.09	15 2604
132	7.9	39.7	41.8	44.0	46.3	48.3	c	45 44.03	54 30 " "	V 41.720	8 46 9.03	15 40 35.66	15 2607
133	8.7	0.5	2.5	4.5	6.6	8.8	(c)	47 4.59	53 30 5.0 1.0	V 44.050	8 47 29.70	14 41 16.78	14 2681
134	8.6	18.3	20.0	22.0	23.9	26.2	a	48 51.47	53 40 5.0 1.1	III 43.530	8 49 16.57	14 51 6.44	14 2696
135	8.4	51.0	52.9	54.7	56.8	58.9	a	50 24.16	53 2 5.0 1.0	I 48.570	8 50 49.32	14 14 39.36	14 2704
136	8.7	29.7	31.4	33.5	35.3	37.5	a	51 2.76	52 54 5.0 1.7	III 45.460	8 51 27.94	−14 5 42.20	−13 2717
137	9.5	55.0	57.0	58.9	0.8	3.0	a	52 28.37	54 2 5.0 2.0	I 42.940	8 52 53.45	−15 12 56.24	−15 2649
138	8.2	7.4	9.5	11.6	13.9	15.8	c	55 11.65	53 14 5.0 1.2	III 44.930	8 55 36.81	14 25 34.29	14 2722
139	8.9	41.6	43.3	45.0	47.0	49.4	a	56 14.60	53 14 " "	I A 46.750	8 56 39.76	14 29 20.73	14 2727
140	9.3	40.6	42.5	44.5	46.3	48.3	a	57 13.82	53 36 5.0 1.8	I 46.970	8 57 38.96	14 48 13.36	14 2730
141	8.6	33.8	35.8	37.8	39.7	41.9	a	58 7.19	53 36 " "	I A 46.470	8 58 32.32	14 51 17.40	14 2733
142	8.7	42.0	44.0	45.7	47.9	50.0	a	59 15.40	54 20 5.0 1.6	III 42.760	8 59 40.48	15 30 57.76	15 2685
143	9.0	2.8	4.7	6.7	8.5	10.8	a	0 36.05	53 24 5.0 1.2	I 42.770	9 1 1.22	14 34 53.77	14 2742
144	8.9	2.3	4.4	6.2	8.2	10.4	a	1 35.91	55 16 5.0 2.4	I 46.990	9 2 0.91	16 28 20.49	16 2684
145	8.7	33.2	35.6	37.5	39.3	41.4	e	2 7.88	54 4 5.0 1.3	VII 44.770	9 2 33.00	15 15 39.21	15 2703
146	9.0	15.9	18.0	20.2	24.4	26.0	c_3 d_2	3 15.92	53 46 5.0 1.3	V 46.840	9 3 41.07	−14 58 16.72	−14 2755

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
147	9.1	46.0	48.2	50.4	52.6	54.8	c	4 50.41	53 56 5.0	1.9	V	44.560	9 5 15.55	−15 7 34.66	−14 2765
148	7.7	43.0	45.3	47.6	49.8	51.8	c	5 47.51	53 56 "	"	III B	40.540	9 6 12.66	15 3 4.48	14 2772
149	......	34.6	36.8	38.7	40.5	42.7	e	6 9.25	53 20 3.7	0.5	VII	46.880	9 6 34.45	14 32 17.68	14 2773
150	8.5	59.5	1.8	3.8	5.5	7.7	e	7 34.14	54 6 3.7	0.7	V	43.780	9 7 59.28	15 17 19.98	15 2729
151	8.9	19.6	22.0	23.7	25.6	27.7	e	7 54.20	54 6 "	"	VII	40.560	9 8 19.34	15 16 20.25	15 2731
152	8.6	13.4	15.5	17.5	19.4	21.3	e	8 47.89	54 6 "	"	V A	40.930	9 9 13.03	15 19 39.14	15 2737
153	8.3	2.5	4.3	6.2	8.0	10.3	a	11 35.87	55 14 5.0	2.7	I	42.990	9 12 0.94	16 25 7.88	16 2735
154	8.0	19.7	22.0	23.8	25.6	27.6	e	11 54.25	53 54 5.0	1.6	V	43.840	9 12 19.43	15 5 23.12	14 2802
155	8.0	20.0	22.0	24.3	26.6	28.6	c	13 24.31	53 34 5.0	1.2	III	41.820	9 13 49.53	14 44 42.41	14 2813
156	8.9	5.4	7.4	9.4	11.7	13.8	c	14 9.55	54 10 5.0	1.6	V	45.110	9 14 34.72	−15 21 48.82	−15 2762
157	6.8	50.1	52.4	54.4	56.2	58.0	e	14 24.68	54 10 "	"	V A	43.950	9 14 49.85	−15 24 39.81	−15 2763
158	8.5	4.0	6.0	8.2	10.4	12.6	c	19 8.25	54 24 5.0	1.4	III	42.410	9 19 33.43	15 34 57.99	15 2780
159	8.0	47.7	49.8	51.7	53.7	56.0	a	20 21.28	54 24 "	"	I A	47.370	9 20 46.46	15 39 44.23	15 2791
160	8.9	44.8	46.7	48.6	50.9	53.0	a	21 18.29	54 24 "	"	III	40.650	9 21 43.48	15 34 25.20	15 2792
161	7.3	19.5	20.9	22.8	24.8	27.0	a	21 52.49	54 24 "	"	I	41.770	9 22 17.68	15 34 44.89	15 2799
162	7.9	9.9	11.7	13.6	15.6	17.7	a	22 43.03	53 14 5.0	2.0	III	45.360	9 23 8.32	14 25 52.26	14 2860
163	8.2	16.2	18.0	20.0	22.0	24.2	a	23 49.53	54 12 5.0	1.3	III	42.440	9 24 14.74	15 22 59.44	15 2812
164	8.5	32.3	34.0	36.2	38.0	40.3	a	25 5.59	54 0 5.0	1.0	I	42.770	9 25 30.83	15 11 3.57	14 2865
165	7.0	9.0	11.0	13.0	15.1	17.3	c	25 13.09	54 0 "	"	III B	43.780	9 25 38.33	15 8 12.15	14 2867
166	8.6	13.0	15.3	17.2	19.0	21.0	e	25 47.58	54 6 5.0	1.2	V	45.510	9 26 12.81	−15 17 59.78	−15 2821
167	8.6	56.2	58.3	0.5	2.7	4.7	c	31 0.49	53 6 5.0	1.6	V A	47.450	9 31 25.82	−14 21 48.65	−14 2897
168	7.7	27.3	29.2	31.3	33.6	35.9	c	32 31.47	54 4 5.0	1.8	III	42.300	9 32 56.75	15 14 59.33	15 2844
169	8.8	7.9	9.9	12.0	14.2	16.3	c	33 12.07	54 4 "	"	III A	45.380	9 33 37.34	15 19 11.26	15 2850
170	8.7	55.4	57.7	59.6	1.5	3.5	e	38 30.10	53 32 5.0	1.8	VII	41.820	9 38 55.45	14 42 53.50	14 2933
171	8.2	17.0	19.3	21.0	23.2	25.0	e	39 51.69	53 20 5.0	1.2	VII	47.560	9 40 17.06	14 32 42.27	14 2938
172	7.6	30.8	32.7	34.6	36.6	38.8	a	42 4.36	55 32 5.0	2.5	I	46.990	9 42 29.59	16 44 34.36	16 2887
173	8.2	9.3	11.1	13.2	15.0	17.2	a	42 42.49	53 16 5.0	1.7	III	46.220	9 43 7.89	14 28 14.54	14 2951
174	8.7	16.3	18.5	20.4	22.3	24.2	e	42 50.87	53 46 5.0	1.8	V	43.030	9 43 16.23	14 57 16.98	14 2952
175	8.8	28.9	31.0	33.2	35.4	37.6	c	44 33.23	55 20 5.0	2.6	V A	40.930	9 44 58.49	16 33 55.59	16 2895
176	9.2	37.3	39.8	41.8	43.5	45.5	e	45 11.88	55 20 "	"	V	46.350	9 45 37.15	−16 32 25.93	−16 2897
177	5.8	40.0	42.4	44.0	46.0	48.0	e	46 14.68	53 14 5.0	1.7	V (B)	44.890	9 46 40.11	−14 22 39.34	−14 2963
178	8.9	4.7	7.0	8.8	10.9	12.8	e	46 39.40	53 14 "	"	VII	48.240	9 47 4.82	14 26 57.09	14 2965
179	8.9	30.9	33.6	35.2	37.2	39.2	e	48 5.68	54 18 5.0	1.7	VII	(43).010	9 48 31.04	15 29 20.99	15 2924
180	9.0	5.8	7.6	9.9	12.0	14.4	c	49 9.95	54 18 "	"	V A	47.020	9 49 35.32	15 33 49.15	15 2927
181	9.0	42.0	44.3	46.2	48.0	50.0	e	49 16.55	54 18 "	"	VII A	44.250	9 49 41.92	15 32 57.78	15 2928
182	8.8	8.3	10.8	12.6	14.5	16.5	e	50 43.05	53 52 5.0	1.7	VII	45.730	9 51 8.46	15 4 12.18	14 2980
183	9.0	5.0	7.4	9.5	11.6	13.9	c	52 9.49	53 52 "	"	III	49.190	9 52 34.91	15 5 15.34	14 2984
184	8.9	47.5	49.9	51.9	53.6	55.7	e	52 22.23	53 52 "	"	VII	48.570	9 52 47.65	15 5 6.67	14 2986
185	9.1	53.4	55.7	57.5	59.4	1.3	e	54 28.10	52 54 5.0	1.6	V	43.620	9 54 53.60	14 5 28.73	13 3003
186	9.2	39.9	41.8	43.7	48.0	49.6	c_3 d_2	55 39.62	54 14 5.0	1.7	V	46.040	9 56 5.04	−15 26 19.00	−15 2958
187	8.7	57.8	59.9	2.0	4.0	6.3	c	57 2.01	53 10 5.0	1.7	III	42.850	9 57 27.51	-14 21 13.90	−14 3008
188	9.4	6.7	8.6	10.7	13.0	15.0	c	58 10.81	53 38 5.0	1.1	V	47.370	9 58 36.29	14 50 42.89	14 3012
189	9.1	27.5	29.2	31.0	33.0	35.4	a	3 0.57	53 26 5.0	1.2	I	43.440	10 3 26.09	14 37 25.31	14 3033
190	8.2	22.5	24.6	26.7	28.9	31.0	c	4 26.75	53 4 5.0	1.5	III	46.100	10 4 52.30	14 16 17.17	14 3041
191	8.8	11.4	13.5	15.8	17.8	20.0	c	5 15.71	53 56 5.0	2.0	V	44.920	10 5 41.22	15 7 59.28	14 3044
192	7.5	2.0	4.3	6.2	8.0	10.0	e	5 36.60	53 56 "	"	V A	50.720	10 6 2.10	15 13 2.76	14 3046
193	8.7	25.3	27.4	29.6	31.8	33.9	c	7 29.61	52 56 5.0	2.2	III	43.700	10 7 55.18	14 7 32.18	13 3059
194	8.0	42.4	44.6	46.7	48.8	50.8	c	8 46.66	53 2 5.0	2.5	III	44.460	10 9 12.24	14 13 47.37	14 3062
195	8.7	36.3	38.5	40.6	42.7	45.0	c	9 40.63	53 16 5.0	1.2	III	45.120	10 10 6.20	14 28 0.15	14 3066
196	8.7	9.6	12.0	13.9	15.6	17.6	e	9 44.33	53 16 "	"	V A	49.670	10 10 9.90	−14 32 41.40	−14 3067
197	8.3	15.3	17.5	19.5	21.2	23.0	e	13 49 84	53 38 5.0	1.2	VII	43.210	10 14 15.42	−14 49 28.86	−14 3086
198	8.8	23.0	25.0	27.1	29.3	31.4	c	15 27.17	52 54 5.0	1.6	III	43.840	10 15 52.80	14 5 36.21	13 3095
199	8.4	21.1	23.1	25.2	27.4	29.6	c	16 25.29	53 30 5.0	1.7	III	44.320	10 16 50.90	14 41 47.32	14 3097
200	9.0	54.4	56.0	58.0	0.1	2.3	a	17 27.64	54 22 5.0	3.0	III	42.310	10 17 53.22	15 33 12.50	15 3042
201	9.0	2.5	4.6	6.7	8.9	10.9	c	18 6.73	54 32 5.0	2.7	V	44.260	10 18 32.30	15 43 51.73	15 3044
202	8.7	55.7	57.8	59.9	2.0	4.3	c	18 59.95	52 54 5.0	2.2	V	47.730	10 19 25.61	14 6 52.92	13 3108
203	......	48.2	50.4	52.4	54.1	56.0	e	22 22.75	53 46 5.0	2.8	VII	42.740	10 22 48.40	14 57 22.88	14 3123
204	9.0	52.0	54.3	56.5	0.6	2.0	c_3 d_2	23 52.10	54 4 5.0	1.5	V	43.600	10 24 17.74	15 15 38.34	15 3067
205	8.3	42.2	44.3	46.4	48.6	50.8	c	27 46.47	53 2 5.0	2.0	V	45.670	10 28 12.19	14 14 15.71	14 3138
206	9.2	45.7	47.4	49.5	51.5	53.6	a	29 18.82	52 52 5.0	1.3	I	45.680	10 29 44.56	−14 4 11.91	−13 3158
207	8.6	21.0	23.2	25.5	27.6	29.7	c	29 25.41	53 0 5.0	2.4	V	42.900	10 29 51.15	−14 11 23.37	−13 3159
208	8.6	12.0	14.3	16.0	17.9	19.9	e	29 46.63	53 12 5.0	2.4	VII	42.250	10 30 12.36	14 23 13.10	14 3146
209	9.4	53.8	55.7	57.6	59.5	1.7	a	35 27.06	53 46 5.0	2.5	III	43.960	10 35 52.82	14 57 45.30	14 3160
210	8.0	55.0	57.5	59.3	1.2	3.0	e	35 29.76	53 30 5.0	2.1	VII	41.920	10 35 55.53	14 41 8.54	14 3161
211	8.7	10.3	12.0	13.8	15.7	18.0	a	37 43.25	53 4 5.0	1.7	I B	45.940	10 38 9.05	14 13 6.85	13 3201
212	8.0	54.6	56.4	58.3	0.3	2.4	a	38 27.70	53 4 "	"	I	45.400	10 38 53.51	14 16 8.95	14 3169
213	9.4	7.3	9.6	11.7	13.9	16.0	c	39 11.71	53 4 "	"	(V) A	45.810	10 39 37.52	14 19 33.28	14 3172
214	8.0	22.0	23.7	25.5	27.4	29.5	a	40 54.97	53 24 6.0	2.9	I	47.050	10 41 20.79	14 36 42.82	14 3175
215	7.9	30.6	32.8	34.6	36.4	38.5	e	41 5.17	53 24 "	"	V B	37.230	10 41 30.99	14 30 26.96	14 3176
216	7.6	16.7	18.8	20.9	23.2	25.1	c	42 20.95	53 24 "	"	III	41.350	10 42 46.78	−14 34 56.35	−14 3189
217	8.5	58.0	0.5	2.1	4.0	6.0	e	45 32.73	53 10 5.0	1.2	VII	43.760	10 45 58.60	−14 21 43.76	−14 3202

Reduction Elements. Zones 18 and 19.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 1.3....	+0.324	0.000	+0.477	+0.297	−0.013	+0.590
1.5....	+0.270	−0.026	+0.632			
			+0.660			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	α Leporis		*κ* Orionis		5 Monocerotis		19 Canis Majoris		29 Canis Majoris		4 Navis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	56 44 4.50		48 32 4.00		45 4 3.40		58 50 3.70		63 10 3.30		53 8 3.30	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.500	5 4.44		5 56.79	47.000	6 10.34		5 7.13	48.620	6 41.19	45.600	5 44.04
II Red. to Mer......	.450	1.63	46.260	1.72		1.73		1.60	.570	1.56	.520	1.67
VI Inclination	.330		.130	0.82	46.790	0.54	43.550	2.04	.380		.410	
VII Refraction.......	.270	1 28.9	.030	1 6.1	.770	58.7	.510	1 36.8	.330	1 55.9	.350	1 18.4

	e Navis		Piazzi VIII. 95		Piazzi VIII. 227		Lalande 18817		*κ* Hydrae		*υ*² Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	61 26 3.55		58 2 3.75		54 34 3.40		59 28 3.30		52 40 3.15		51 22 3.15	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42.430	4 43.79	47.350	6 17.06	43.310	5 0.38	45.970	5 50.62	47.985	6 30.19	48.090	6 31.21
II Red. to Mer......	.370	1.57	.315	1.62	.240	1.65	.885	1.59	.980	1.67	.030	1.69
VI Inclination	.240		.120		.090		.745		.840		47.870	
VII Refraction.......	.170	1 47.8	.040	1 34.4	.060	1 22.8	.665	1 40.1	.780	1 17.5	.810	1 14.1

	22 Sextantis		*μ* Hydrae		*φ* Hydrae		*ν* Hydrae		*b*² Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	46 22 3.60		55 8 3.80		55 10 3.70		54 28 3.45		58 24 3.90	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.570	6 2.71	43.280	4 59.52	42.880	4 52.49	45.370	5 39.66	43.900	5 11.56
II Red. to Mer......	.510	1.73	.190	1.65	.830	1.65	.290	1.65	.820	1.61
VI Inclination	.380		.060		.690		.170		.690	
VII Refraction.......	.350	1 2.1	42.990	1 24.9	.640	1 25.0	.130	1 22.9	.640	1 36.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Groombridge 966..	5 25 25.68	6	−0.23	[+9.19]	323 58 .. .	....
α Leporis..........,	5 27 54.23	11	+0.82	+8.83	56 50 39.5	41.6
κ Orionis...........	5 42 34.81	11	+0.74	+8.85	48 39 9.4	41.0
5 Monocerotis	6 9 32.32	11	+0.71	+8.92	45 11 14.7	40.7
19 Canis Majoris.....	6 50 52.97	11	+0.85	+8.81	58 56 51.3	41.3
29 Canis Majoris	7 14 6.89	11	+0.90	+8.83	63 18 41.9	41.0
26 Monocerotis	7 36 2.55	11	+0.74	+8.83	48 12	....
4 Navis.............	7 40 55.51	11	+0.79	+8.89	53 15 7.4	41.2
Groombridge 1374.	7 47 26.77	11	−0.20	[+8.73]	324 44	....
e Navis.............	7 52 9.59	11	+0.88	+8.78	61 32 36.7	41.2
Piazzi VIII. 95.....	8 26 36.72	11	+0.84	+8.87	58 9 56.8	41.9
Piazzi VIII. 227....	8 53 37.20	11	+0.80	+8.85	54 40 28.2	40.9
Lalande 18817.....	9 28 11.35	11	+0.85	+8.87	59 35 35.6	42.2
κ Hydrae...........	9 35 5.35	11	+0.78	+8 78	52 47 52.5	42.0
*υ*² Hydrae...........	9 59 49.73	11	+0.77	+8.75	51 29 50.1	42.0
22 Sextantis.........	10 12 13.71	11	+0.72	+8.86	46 29 10.1	41.8
μ Hydrae...........	10 20 49.71	11	+0.80	+8.77	55 14 29.9	41.0
9 H. Draconis.......	10 26 4.66	8	−0.30	[+8.55]	322 40	...
φ Hydrae...........	10 33 16.90	11	+0.81	+8.79	55 16 22.8	41.7
ν Hydrae....	10 44 15.57	11	+0.80	+8.76	54 35 7.7	40.9
*b*² Hydrae....	10 48 10.22	11	+0.84	+8.74	58 30 53.3	41.7

h		s
6.048...........	*dt*.....................	+8.852
	Hourly rate	−0.0141
		° ′ ″
	Adopted Equator Point.........	38 56 41.42

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 30	29.865	47.9	47.5
6 10	29.845	46.0	46.2
6 50	29.855	44.4	45.3
7 55	29.845	42.8	43.3
8 42	29.845	41.8	42.3
9 15	29.835	41.8	41.4
10 2	29.825	40.4	40.3
10 52	29.815	39.7	39.3

Notes.

17, 46. Faint companion s.f.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	+0.774	5 30	......	+15.825	+15.677	+15.528	+15.377	+15.224
53	0.784	6 0	......	15.666	15.518	15.367	15.215	15.061
54	0.794	6 30	......	15.547	15.401	15.252	15.103	+14.951
55	0.804	7 0	+15.612	15.472	15.330	15.187	......	......
56	0.815	7 30	15.575	15.440	15.307	15.171	......	......
57	+0.825	8 0	15 581	15.458	15.330	15.204	......	......
		8 30	15.628	15.516	15.401	15.286	15.170	......
		9 0	15.718	15.619	15.518	15.416	15.313	......
		9 30	15.849	15.764	15.679	15.591	+15.504	......
		10 0	16.018	15.949	15.879	15.809	......	......
		10 30	16.220	16.171	16.120	16.067	......	......
		11 0	+16.456	+16.425	+16.391	+16.358	......	......

APPARENT RIGHT ASCENSION.	$D =$ Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
5 30	....	−2.45	−2.73	−3.01	−3.28	−3.54	75.79	77.16	80.02	83.00	86.16	89.45
6 0	....	2.51	2.78	3.04	3.30	3.55	75.91	77.29	80.15	83.14	86.30	89.60
6 30	....	2.64	2.89	3.13	3.38	−3.62	76.03	77.41	80.28	83.27	86.44	89.74
7 0	−2.64	2.86	3.09	3.32	....	....	76.17	77.55	80.43	83.43	86.60	89.91
7 30	2.97	3.18	3.38	3.59	....	....	76.31	77.70	80.58	83.58	86.76	90.07
8 0	3.38	3.55	3.73	3.89	....	....	76.42	77.80	80.69	83.70	86.88	90.20
8 30	3.86	3.99	4.13	4.27	4.41	....	76.52	77.91	80.80	83.81	87.00	90.32
9 0	4.41	4.51	4.60	4.70	4.81	....	76.63	78.02	80.91	83.93	87.12	90.45
9 30	5.00	5.07	5.13	5.19	−5.25	....	76.74	78.13	81.02	84.04	87.24	90.57
10 0	5.64	5.66	5.69	5.71	....	....	76.82	78.22	81.10	84.14	87.34	90.68
10 30	6.31	6.30	6.27	6.24	....	....	76.89	78.29	81.19	84.22	87.42	90.76
11 0	−7.00	−6.94	−6.88	−6.82	....	....	76.97	78.36	81.26	84.29	87.50	90.84

1894 MARCH 3. ZONE 20. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.2	42.2	44.5	46.3	48.3	50.2	e	44 16.35	56 56 5.0 3.8	VII	41.540	5 44 42.23	−18 5 16.31	−18 1196
2	8.7	32.6	34.4	36.7	40.9	42.5	$c_3 d_2$	45 32.42	55 4 5.0 2.5	V	44.190	5 45 58.56	16 13 59.79	16 1269
3	8.4	38.7	40.6	42.7	44.8	47.1	c	46 42.79	53 46 5.0 2.6	V	45.070	5 47 9.10	14 56 13.67	14 1262
4	8.0	33.0	35.2	37.4	41.7	43.2	$c_3 d_2$	47 33.11	54 24 5.0 2.3	V	45.190	5 47 59.33	15 34 17.91	15 1199
5	8.1	13.4	15.6	17.6	19.9	22.0	c	49 17.70	55 54 5.0 3.8	V A	44.950	5 49 43.69	17 7 32.30	17 1281
6	8.5	7.5	9.4	11.8	13.9	16.0	c	50 11.73	55 54 “ “	V B	39.290	5 50 37.73	16 59 19.65	17 1288
7	8.0	21.4	23.6	25.7	28.0	30.1	c	51 25.77	56 6 5.0 3.1	III	41.(570)	5 51 51.73	17 15 14.98	17 1300
8	8.8	1.1	3.5	5.4	7.3	9.3	e	51 35.50	56 6 “ “	V A	39.(200)	5 52 1.45	17 17 44.18	17 1302
9	9.0	58.9	1.2	3.2	4.9	6.8	e	54 33.21	55 56 5.0 3.0	V	41.100	5 54 59.19	17 5 8.52	17 1320
10	8.5	21.0	23.4	25.3	27.1	29.1	e	54 55.39	55 56 “ “	VII	41.200	5 55 21.37	−17 5 12.03	−17 1321
11	8.4	23.3	25.3	29.7	31.2	34.0	$c_4 d_3$	56 21.09	56 20 5.0 2.9	VI	45.170	5 56 47.00	−17 30 28.84	−17 1327
12	8.9	44.7	46.4	48.4	50.3	52.4	a	59 18.01	54 58 5.0 2.5	I	45.760	5 59 44.10	16 8 33.22	16 1344
13	9.2	16.0	17.7	19.7	21.7	24.0	a	0 49.56	56 2 5.0 3.5	I	46.420	6 1 15.49	17 12 50.20	17 1349
14	7.8	7.0	8.9	10.8	12.9	15.0	a	1 40.61	55 42 5.0 2.9	I	47.330	6 2 6.58	16 53 6.67	16 1356
15	9.3	15.4	17.1	19.1	21.1	23.4	a	2 48.90	55 42 “ “	I	42.480	6 3 14.87	16 51 34.95	16 1368
16	7.6	6.9	9.1	11.2	13.5	15.6	c	3 11.27	54 42 5.0 2.2	V	47.400	6 3 37.38	15 53 9.04	15 1275
17	8.0	39.8	41.7	43.8	46.0	48.1	c	8 43.89	54 16 5.0 2.5	V	42.080	6 9 10.04	15 25 29.64	15 1315
18	8.9	56.5	58.8	0.7	2.6	4.6	e	9 30.93	55 26 5.0 3.5	V	42.170	6 9 56.91	16 35 35.53	16 1407
19	9.0	47.0	49.1	51.5	53.6	55.8	c	10 51.41	54 10 5.0 2.0	V	41.240	6 11 17.56	15 19 14.22	15 1322
20	9.1	31.2	33.5	35.3	37.3	39.3	e	11 5.79	54 10 “ “	VII A	38.380	6 11 31.94	−15 21 34.21	−15 1325

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
21	9.0	10.5	12.1	14.3	16.2	18.4	(a)	13 43.69	53 42	5.0	2.2	I	46.420	6 14 9.89	−14 52 49.74	−14 1398
22	9.3	6.0	7.8	9.7	11.7	13.8	a	15 39.29	54 24	5.0	2.0	I	43.000	6 16 5.40	15 33 47.42	15 1352
23	9.0	44.3	46.2	48.2	50.2	52.4	a	16 17.75	54 24	“	“	I A	37.550	6 16 43.85	15 35 17.23	15 1356
24	7.7	37.1	38.8	40.8	42.9	45.1	a	17 10.43	54 24	“	“	III A	42.340	6 17 36.53	15 36 50.56	15 1361
25	8.2	20.6	22.7	24.8	27.0	29.2	c	18 24.87	54 40	5.0	1.9	III	47.000	6 18 50.93	15 51 7.50	15 1366
26	8.9	39.4	41.1	43.1	45.1	47.2	a	20 12.55	53 34	5.0	1.5	I	45.830	6 20 38.76	14 44 41.18	14 1437
27	8.8	7.0	8.9	10.8	12.8	14.8	a	21 40.33	54 16	5.0	2.6	III	48.140	6 22 6.43	15 27 30.16	15 1385
28	8.6	8.0	9.8	11.8	13.7	15.8	a	22 41.33	54 32	5.0	2.0	III	46.950	6 23 7.39	15 43 8.46	15 1392
29	7.8	11.9	13.5	15.4	17.4	19.7	a	24 45.27	55 46	5.0	2.3	I	45.400	6 25 11.16	16 56 41.91	16 1500
30	8.0	57.3	59.2	1.4	3.3	5.3	a	25 30.98	55 46	“	“	III B	41.890	6 25 56.87	−16 52 24.97	−16 1504
31	7.8	28.7	30.5	32.4	34.2	36.6	a	27 1.94	54 14	5.0	2.4	I	44.810	6 27 28.03	−15 24 27.56	−15 1416
32	8.7	54.3	56.1	58.0	0.0	2.2	a	28 27.58	54 14	“	“	I A	44.420	6 28 53.66	15 27 34.10	15 1427
33	8.9	17.6	19.6	21.6	23.9	26.0	c	29 21.75	55 0	5.0	3.0	III A (42)	.490	6 29 47.72	16 13 1.94	16 1526
34	9.0	18.7	21.0	22.8	24.7	26.8	e	29 53.16	55 0	“	“	V B	39.760	6 30 19.15	16 5 46.39	16 1531
35	7.7	2.0	4.1	6.2	8.4	10.6	c	32 6.27	55 6	5.0	2.6	V	44.000	6 32 32.22	16 16 20.74	16 1542
36	7.5	17.2	19.0	21.0	23.0	25.2	a	33 50.65	55 0	5.0	2.1	III	44.040	6 34 16.61	16 10 20.23	16 1556
37	8.0	29.0	31.2	33.3	35.6	37.8	c	35 33.39	55 44	5.0	1.8	V	46.590	6 35 59.39	15 55 10.37	15 1469
38	9.0	46.8	49.0	51.0	52.8	54.8	e	36 20.96	56 42	5.0	3.2	VII	44.070	6 36 46.69	17 52 30.79	17 1583
39	9.2	22.6	25.0	26.7	28.6	30.9	e	36 56.85	56 42	“	“	VII	41.760	6 37 22.58	17 51 47.13	17 1587
40	9.2	2.9	5.3	7.2	9.1	11.1	e	41 37.35	55 44	5.0	3.1	V	47.830	6 42 3.20	−16 55 40.64	−16 1598
41	9.0	52.3	54.2	56.1	58.1	0.4	a	44 26.12	57 2	5.0	3.8	I	43.530	6 44 51.79	−18 12 21.12	−18 1562
42	8.0	24.2	26.5	28.6	30.7	33.0	c	45 28.61	55 38	5.0	2.5	III	47.310	6 45 54.47	16 49 30.49	16 1623
43	8.2	28.4	30.6	32.9	35.0	37.1	c	46 32.81	56 44	5.0	3.5	V	47.450	6 46 58.51	17 55 39.20	17 1651
44	9.2	22.2	24.5	26.6	28.8	31.0	c	47 26.63	55 6	5.0	3.1	V	41.740	6 47 52.56	16 15 45.84	16 1636
45	8.4	33.5	35.8	37.8	39.6	41.6	e	48 7.80	56 20	5.0	2.0	VII	42.040	6 48 33.56	17 29 56.46	17 1663
46	7.8	49.8	52.0	54.0	56.3	58.5	c	49 54.13	53 34	5.0	1.7	III	42.970	6 50 20.26	14 44 3.94	14 1637
47	9.0	38.9	40.9	43.0	45.2	47.4	c	50 43.09	53 34	“	“	III B	43.450	6 51 9.22	14 41 1.17	14 1643
48	9.1	57.6	59.8	1.6	3.4	5.5	e	51 32.20	53 4	5.0	2.0	V	46.900	6 51 58.39	14 15 20.03	14 1651
49	9.4	25.8	27.9	30.0	32.2	34.4	c	53 30.07	55 58	5.0	3.1	V	43.510	6 53 55.87	17 8 25.16	17 1707
50	8.7	50.4	52.5	54.6	57.0	59.0	c	54 54.71	54 16	5.0	1.5	III	46.420	6 55 20.74	−15 27 13.91	−15 1593
51	9.5	48.1	50.0	52.4	54.5	56.7	c	55 52.35	54 0	5.0	1.1	III	44.030	6 56 18.42	−15 10 28.00	−15 1602[1]
52	9.0	18.0	20.5	22.4	24.3	26.2	e	55 52.77	54 0	“	“	V	44.100	6 56 18.84	15 10 30.96	15 1602[2]
53	7.9	20.0	22.3	24.2	26.0	27.9	e	56 54.56	54 0	“	“	V (A)	46.480	6 57 20.62	15 14 29.75	15 1608
54	5.8	43.8	46.0	48.0	50.1	52.3	c	58 48.05	54 18	5.0	1.9	V	45.820	6 59 14.07	15 29 6.39	15 1625
55	9.3	29.6	31.5	33.7	35.8	38.0	c	0 33.73	54 18	“	“	III B	40.290	7 0 59.76	15 24 8.06	15 1640
56	9.1	1.7	3.8	6.0	8.1	10.4	(c)	3 6.01	54 32	5.0	1.8	V	46.240	7 3 32.00	15 43 17.15	15 1659
57	8.8	46.3	48.3	50.5	52.7	54.8	c	3 50.53	54 32	“	“	III A	46.240	7 4 16.51	15 46 28.98	15 1664
58	7.8	7.0	9.1	11.1	13.5	15.5	c	5 11.25	54 20	5.0	1.7	V	46.380	7 5 37.26	15 31 20.25	15 1681
59	8.6	20.2	22.0	24.0	26.0	28.0	a	6 53.47	54 2	5.0	1.7	I	44.080	7 7 19.52	15 12 33.06	15 1690
60	9.3	57.3	59.3	1.1	3.1	5.3	a	8 30.72	54 28	5.0	1.5	I	42.000	7 8 56.71	−15 37 55.37	−15 1706
61	8.0	48.8	50.9	53.0	57.3	58.8	c_3 d_2	8 48.76	54 58	5.0	1.4	V	47.990	7 9 14.68	−16 9 54.35	−16 1837
62	9.5	58.8	0.8	3.0	7.2	8.8	c_3 d_2	9 58.69	55 46	5.0	2.0	V	43.220	7 10 24.51	16 56 26.32	16 1845
63	8.9	34.7	36.5	38.3	40.4	42.6	a	12 8.09	55 6	5.0	2.9	I	46.000	7 12 33.99	16 17 15.83	16 1870
64	8.7	0.3	2.3	4.5	6.7	8.8	c	13 4.53	54 8	5.0	1.5	III B	39.920	7 13 30.57	15 14 6.63	15 1746
65	8.2	42.7	44.9	46.9	49.1	51.1	c	13 46.95	54 8	“	“	V	39.240	7 14 12.98	15 17 7.99	15 1753
66	8.8	44.2	46.2	48.3	50.7	52.7	c	14 48.43	54 8	“	“	III A	37.010	7 15 14.46	15 19 37.51	15 1768
67	9.0	37.0	38.7	40.8	42.7	44.9	a	21 10.21	53 40	5.0	1.7	I A	42.210	7 21 36.30	14 53 16.76	14 1894
68	9.3	17.2	19.2	21.3	23.7	25.9	c	21 21.47	53 40	“	“	III B	41.140	7 21 47.57	14 46 32.75	14 1896
69	8.9	47.2	49.7	51.6	53.4	55.5	e	21 22.03	53 40	“	“	VII B	34.590	7 21 48.13	14 44 31.03	14 1897
70	8.9	16.3	18.4	20.2	22.2	24.3	a	25 49.71	54 2	5.0	1.5	I	45.160	7 26 15.75	−15 13 2.86	−15 1869
71	9.0	58.5	0.3	2.2	4.2	6.3	a	27 31.74	54 2	“	“	I	51.150	7 27 57.78	−15 14 57.71	15 1888
72	8.0	40.0	42.0	44.0	46.0	48.2	a	28 13.48	54 2	“	“	I	49.010	7 28 39.52	15 14 17.30	15 1892
73	9.3	9.7	11.7	14.0	16.1	18.4	c	28 13.99	54 2	“	“	III A	50.200	7 28 40.02	15 17 54.87	15 1893
74	9.0	20.5	22.3	24.2	26.1	28.4	a	29 53.67	53 32	5.0	1.6	I	47.510	7 30 19.77	14 43 48.25	14 1980
75	7.0	28.8	30.7	32.6	34.6	36.8	a	31 2.00	53 6	5.0	1.4	I	42.730	7 31 28.16	14 16 16.54	14 1999
76	9.0	16.3	18.4	20.7	22.7	25.0	c	31 20.63	53 6	“	“	III	43.310	7 31 46.79	[14 16 29.54]	14 2012
77	8.9	10.6	13.0	14.8	16.7	18.7	e	31 45.37	53 6	“	“	VII A	45.110	7 32 11.52	14 20 19.92	14 2029
78	9.2	45.4	47.6	49.6	51.5	53.5	e	37 19.96	54 22	5.0	1.7	VII	45.340	7 37 45.96	15 33 17.70	15 1986
79	9.0	58.7	0.9	2.8	4.7	6.7	e	38 33.38	53 4	5.0	1.2	V	43.500	7 38 59.55	14 14 38.00	14 2181
80	9.0	46.5	48.3	50.2	52.1	54.2	a	43 19.75	54 26	5.0	1.7	I	44.340	7 43 45.76	−15 36 56.77	−15 2056
81	9.0	44.2	46.0	47.9	50.0	52.1	a	45 17.51	54 18	5.0	1.7	I	43.250	7 45 43.54	−15 28 36.58	−15 2079

1894 MARCH 3. ZONE 21. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
82	7.7	10.5	12.5	14.7	16.8	18.9	c	4 14.69	54 6 5.0 1.6	V 42.720	8 4 40.77	−15 16 37.91	−15 2278
83	9.0	27.4	29.8	31.7	33.6	35.5	e	5 2.06	54 14 5.0 1.5	V 46.800	8 5 28.13	15 25 56.27	15 2289
84	8.8	28.1	30.5	32.4	34.2	36.1	e	6 2.78	53 48 5.0 1.5	VII 46.540	8 6 28.90	14 59 52.00	14 2401
85	8.8	29.5	31.5	33.7	35.9	38.1	c	7 33.75	53 48 “ “	III 48.570	8 7 59.87	15 0 28.19	14 2416
86	8.9	59.8	2.1	3.9	6.0	7.8	e	7 34.44	53 48 “ “	VII 42.790	8 8 0.56	14 58 41.26	14 2417
87	8.0	43.2	45.1	47.1	49.1	51.2	a	10 16.70	54 52 5.0 1.7	III A 47.530	8 10 42.70	16 7 25.84	15 2343
88	9.4	40.0	41.8	43.7	45.8	48.0	a	11 13.42	54 52 “ “	III A 49.020	8 11 39.42	16 7 54.60	16 2374
89	9.5	46.9	48.6	50.5	52.5	54.7	a	12 20.20	54 52 “ “	I (A) 49.010	8 12 46.20	16 7 53.18	16 2382
90	9.6	11.3	13.4	15.4	17.1	19.2	e	14 45.67	54 48 5.0 1.8	VII 41.480	8 15 11.70	15 58 22.41	15 2379
91	8.1	17.5	19.7	21.5	23.5	25.5	e	15 52.03	54 0 5.0 1.9	VII 47.230	8 16 18.14	−15 12 10.11	−15 2388
92	6.8	22.3	24.5	26.5	28.1	30.3	e	16 56.53	56 4 5.0 2.0	VII 46.480	8 17 22.42	−17 16 2.46	−17 2464
93	8.9	1.3	3.5	5.8	9.9	11.6	$c_3 d_2$	18 1.42	54 54 5.0 2.5	VI 41.790	8 18 27.44	16 4 29.63	15 2409
94	9.3	42.2	44.2	46.4	48.8	50.9	c	18 46.51	54 54 “ “	V A 39.950	8 19 12.53	16 7 7.18	15 2414
95	8.1	42.3	44.5	46.6	48.8	51.1	c	19 46.67	54 46 5.0 1.8	V 43.990	8 20 12.72	15 57 10.77	15 2421
96	9.3	17.0	19.0	21.2	23.4	25.5	c	22 21.23	54 46 5.0 1.2	V 44.040	8 22 47.29	15 57 12.50	15 2443
97	8.7	2.0	4.2	6.1	8.0	10.0	e	22 36.45	54 46 “ “	V 45.430	8 23 2.51	15 57 40.07	15 2446
98	8.2	5.0	7.2	9.4	13.6	15.1	$c_3 d_2$	24 5.07	54 14 5.0 1.8	V 47.710	8 24 31.19	15 26 21.82	15 2456
99	8.1	25.8	27.5	29.4	31.4	33.5	a	25 58.91	53 40 5.0 2.1	I 43.210	8 26 25.10	14 50 52.07	14 2552
100	7.8	55.2	57.1	58.9	0.8	3.0	a	27 28.36	53 30 5.0 1.5	I 45.190	8 27 54.57	14 41 29.60	14 2564
101	9.1	49.3	51.2	53.5	55.8	58.0	c	27 53.57	53 12 5.0 0.9	III B 43.130	8 28 19.82	−14 19 38.91	−14 2569
102	9.0	16.7	18.6	20.9	23.1	25.3	c	28 20.93	53 12 “ “	V A 40.680	8 28 47.17	−14 25 19.41	−14 2571
103	8.0	13.3	15.0	17.0	18.9	21.1	a	31 46.39	53 14 5.0 1.2	I 44.340	8 32 12.64	14 25 14.26	14 2588
104	9.1	14.3	16.2	18.1	20.1	22.4	a	32 47.71	54 26 5.0 1.8	I 44.660	8 33 13.84	15 37 24.44	15 2525
105	8.1	13.6	15.8	17.8	19.5	21.7	e	32 48.17	54 0 5.0 1.1	VII 46.530	8 33 14.34	15 12 3.35	15 2526
106	9.2	2.0	4.0	6.0	7.9	10.2	a	34 35.44	54 0 “ “	III B 48.900	8 35 1.62	15 9 33.76	15 2541
107	8.3	8.7	10.8	12.9	15.0	17.1	c	35 12.91	53 46 5.0 1.9	V 42.390	8 35 39.12	14 56 43.79	14 2610
108	9.4	30.0	32.0	34.1	36.4	38.5	c	36 34.21	55 6 5.0 2.7	III 44.500	8 37 0.28	16 17 27.12	16 2555
109	9.1	44.1	46.1	48.2	50.4	52.5	c	37 48.27	54 52 5.0 1.7	V 43.360	8 38 14.37	16 3 6.32	15 2561
110	9.6	5.5	7.9	9.8	11.6	13.7	e	38 40.09	54 42 5.0 1.7	VII 45.950	8 39 6.21	15 53 56.93	15 2568
111	9.2	0.2	2.1	4.4	6.7	8.7	c	40 4.43	54 30 5.0 1.7	V 43.740	8 40 30.58	−15 41 13.37	−15 2578
112	8.9	57.2	59.3	1.5	5.8	7.4	$c_3 d_2$	40 57.25	54 30 “ “	V 48.220	8 41 23.41	−15 42 38.99	−15 2582
113	7.9	30.5	32.6	34.7	37.0	39.1	c	42 34.79	57 8 5.0 3.5	V 47.410	8 43 0.69	18 20 33.38	18 2481
114	9.0	15.0	17.1	19.2	21.5	23.6	c	44 19.29	55 40 5.0 2.6	III B 47.420	8 44 45.35	16 49 15.08	16 2597^1
115	9.0	45.5	47.7	49.5	51.5	53.4	e	44 19.77	55 40 “ “	VII B 47.000	8 44 45.83	16 49 10.02	16 2597^2
116	8.0	22.5	24.8	26.7	28.4	30.4	e	44 56.81	55 40 “ “	VII 45.820	8 45 22.87	16 52 0.26	16 2600
117	7.8	19.1	21.1	23.0	24.9	27.0	a	48 52.45	54 2 5.0 0.6	III 41.100	8 49 18.69	15 12 22.96	15 2626
118	8.5	1.2	2.9	4.6	6.7	9.0	a	50 34.30	54 2 “ “	I B 37.880	8 51 0.55	15 8 8.24	14 2706
119	8.5	7.0	9.0	11.2	13.5	15.7	c	51 11.29	54 12 5.0 1.7	V 41.630	8 51 37.52	15 22 36.57	15 2641
120	8.5	9.4	11.6	13.7	15.9	18.0	c	55 13.73	54 12 5.0 1.0	V 44.820	8 55 39.98	15 23 38.43	15 2664
121	8.2	22.6	24.8	27.1	29.1	31.3	c	56 26.99	53 36 5.0 1.3	V 43.140	8 56 53.30	−14 47 5.32	−14 2729
122	8.9	2.4	4.6	6.5	8.4	10.2	e	57 36.90	54 4 5.0 0.9	VII 44.670	8 58 3.17	−15 15 37.46	−15 2678
123	8.0	3.5	5.4	7.2	9.1	11.5	a	59 37.02	55 42 5.0 1.8	III B 44.130	9 0 3.15	16 50 17.83	16 2679
124	8.3	41.3	43.3	45.3	47.1	49.2	a	0 14.93	55 42 “ “	III A 43.290	9 0 41.06	16 56 27.53	16 2681
125	8.7	50.0	52.1	54.4	56.6	58.6	c	0 54.35	56 56 5.0 2.5	V 45.310	9 1 20.37	18 7 59.07	17 2743
126	8.9	0.3	2.0	3.9	6.0	8.3	a	2 34.01	57 6 5.0 3.8	III 45.530	9 3 0.03	18 18 3.45	18 2578
127	7.8	15.9	17.9	20.0	22.1	24.3	c	3 20.05	53 32 5.0 1.0	V 46.230	9 3 46.40	14 44 6.28	14 2757
128	9.0	23.9	25.8	27.7	29.6	31.8	a	4 57.12	53 32 “ “	I 40.340	9 5 23.48	14 42 11.32	14 2766
129	8.0	25.1	27.1	29.2	31.4	33.5	c	5 29.27	55 22 5.0 2.1	V 45.140	9 5 55.47	16 33 52.27	16 2703
130	8.8	13.5	15.1	17.2	19.2	21.4	a	6 46.91	55 22 “ “	III 47.600	9 7 13.12	16 34 37.91	16 2708
131	8.5	7.5	9.3	11.3	13.2	15.4	a	7 40.94	55 12 5.0 2.2	III 43.280	9 8 7.17	−16 23 15.52	−16 2715
132	9.0	56.5	58.3	0.2	2.3	4.5	a	8 29.96	55 12 “ “	I B 45.400	9 8 56.20	−16 20 42.10	−16 2719
133	9.7	54.5	56.3	58.5	0.4	2.5	a	9 27.83	53 40 5.0 1.8	III 44.340	9 9 54.20	14 51 31.59	14 2788
134	9.3	53.9	55.6	57.6	59.5	1.7	a	14 27.35	55 48 5.0 1.7	I B 43.240	9 14 53.57	16 56 4.62	16 2754
135	9.5	27.3	29.5	31.6	34.0	36.0	c	14 31.69	55 48 “ “	III A 43.860	9 14 57.90	17 2 43.66	16 2755
136	8.0	16.5	18.6	20.9	23.1	25.1	c	15 20.85	55 48 “ “	III 45.420	9 15 47.07	17 0 0.53	16 2757
137	9.1	52.9	54.7	56.6	58.6	0.9	a	17 26.35	55 16 5.0 2.0	I 47.400	9 17 52.63	16 28 35.57	16 2764
138	7.9	48.6	50.5	52.5	54.4	56.5	a	18 21.95	54 10 5.0 1.1	III 46.900	9 18 48.32	15 22 24.43	15 2778
139	7.8	8.1	10.1	12.0	13.9	16.0	a	19 41.45	54 0 5.0 0.8	I 47.200	9 20 7.84	15 12 28.11	15 2787
140	9.1	13.4	15.3	17.3	19.1	21.2	a	20 46.63	53 34 5.0 0.3	I 43.170	9 21 13.07	14 45 10.25	14 2851
141	9.3	36.5	38.2	40.2	42.1	44.3	a	22 9.71	54 8 5.0 1.3	I 44.080	9 22 36.11	−15 19 30.17	−15 2803
142	9.0	39.1	40.8	42.8	44.7	46.9	a	23 12.46	55 10 5.0 2.3	III 45.700	9 23 38.79	−16 22 6.77	−16 2796
143	8.6	32.6	34.4	36.3	38.3	40.6	a	24 6.11	55 38 5.0 1.5	III 42.860	9 24 32.41	16 49 14.03	16 2801
144	9.0	53.5	55.4	57.4	59.2	1.4	a	25 26.75	53 32 5.0 1.5	I 43.090	9 25 53.22	14 43 10.73	14 2870
145	9.0	15.1	17.0	18.9	20.8	23.0	a	26 48.44	54 20 5.0 1.3	I 44.300	9 27 14.86	15 31 36.42	15 2824
146	8.7	59.7	2.0	4.0	8.1	10.0	$c_3 d_2$	30 59.81	52 50 5.0 2.1	V 46.560	9 31 26.37	−14 2 20.29	−13 2893

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
147	8.1	22.8	24.7	27.0	29.2	31.4	c	32 27.03	55 26 5.0 2.3	III 43.050	9 32 53.40	−16 37 20.06	−16 2843
148	7.5	17.9	19.8	21.7	23.6	25.8	a	33 51.49	55 58 5.0 2.2	III 46.230	9 34 17.83	17 10 22.64	16 2848
149	9.4	40.6	42.3	44.4	46.4	48.3	a	35 13.82	53 54 5.0 1.5	I 47.140	9 35 40.32	15 6 31.88	14 2915
150	9.8	51.6	53.7	55.7	58.0	0.1	c	35 55.83	53 32 5.0 1.2	III 46.750	9 36 22.36	14 44 25.26	14 2919
151	8.0	43.6	45.8	47.9	52.1	53.7	c_3 d_2	36 43.64	53 46 5.0 1.6	V 48.230	9 37 10.16	−14 58 56.17	−14 2921
152	9.2	5.6	7.5	9.4	11.3	13.4	a	39 38.95	54 36 5.0 0.7	I B 44.400	9 40 5.43	−15 44 30.42	−15 2890
153	9.4	39.1	41.1	43.3	45.6	47.7	c	39 43.37	54 36 " "	III A 44.920	9 40 9.85	15 51 7.52	15 2891
154	9.2	17.7	19.6	21.5	23.5	25.7	a	42 51.04	54 4 5.0 0.0	III 46.040	9 43 17.58	15 16 14.70	15 2901
155	8.9	50.8	52.9	55.1	57.2	59.5	c	43 55.11	55 56 5.0 2.0	V 41.700	9 44 21.54	17 7 0.78	16 2893
156	8.1	25.5	27.1	29.3	31.2	33.5	a	45 58.61	53 0 5.0 0.1	I 49.120	9 46 25.25	14 13 9.36	14 2960
157	8.7	33.0	34.6	36.5	38.5	40.7	a	47 5.94	52 56 5.0 2.1	I 42.390	9 47 32.59	14 7 2.39	13 2969
158	8.9	0.2	2.3	4.4	6.6	8.7	c	48 4.45	54 18 5.0 1.1	III 43.130	9 48 31.02	15 29 21.96	15 2924
159	9.0	21.1	23.2	25.2	29.5	31.0	c_3 d_2	51 21.02	54 16 5.0 1.5	V B 43.320	9 51 47.62	15 24 15.83	15 2936
160	9.0	4.4	6.8	8.8	10.4	12.6	e	51 39.06	54 16 " "	VII B 48.370	9 52 5.66	15 25 53.41	15 2937
161	9.0	16.1	18.4	20.3	22.1	24.0	e	52 50.63	54 16 " "	VII 45.810	9 53 17.23	15 28 17.46	−15 2944
162	8.2	19.5	22.0	23.8	25.6	27.8	e	53 54.18	54 16 " "	VII A 47.450	9 54 20.79	-15 32 1.81	-15 2949
163	8.3	41.6	43.3	45.3	47.2	49.4	a	57 14.84	54 16 " "	I A 47.720	9 57 41.47	15 32 3.29	15 2966
164	9.2	51.8	53.5	55.4	57.3	59.5	a	58 24.89	53 46 5.0 0.9	I 43.230	9 58 51.56	14 57 23.12	14 3013
165	8.8	44.3	46.4	48.6	50.7	52.8	c	58 48.57	53 58 5.0 1.5	V 44.520	9 59 15.23	15 9 52.10	14 3016
166	9.5	2.7	4.5	6.5	8.5	10.6	a	0 35.87	53 8 5.0 0.6	I 43.500	10 1 2.60	14 19 26.80	14 3025
167	9.0	56.6	58.4	0.4	2.3	4.7	a	1 30.07	55 6 5.0 2.5	I 46.780	10 1 56.69	16 18 36.29	16 2967
168	8.0	59.5	1.5	3.5	5.7	7.9	c	2 3.63	53 46 5.0 1.8	III 45.120	10 2 30.33	14 58 2.25	14 3029
169	8.0	18.9	20.9	22.7	24.6	26.8	a	3 52.18	53 46 " "	I A 40.980	10 4 18.89	14 59 55.29	14 3039
170	8.0	2.0	4.1	6.3	8.4	10.6	c	7 6.29	53 22 5.0 1.0	III 46.360	10 7 33.06	14 34 25.47	14 3054
171	9.0	59.0	1.0	2.9	4.8	7.0	a	8 32.31	53 34 5.0 0.2	III 46.230	10 8 59.08	14 46 23.52	−14 3061
172	8.7	59.5	1.6	3.9	8.1	9.8	c_3 d_2	8 59.55	56 12 5.0 2.5	V 45.430	10 9 26.18	17 24 19.38	−17 3094
173	7.9	26.2	28.0	30.0	31.9	34.0	a	10 59.51	54 26 5.0 1.0	I 46.980	10 11 26.25	15 38 39.50	15 3018
174	8.5	5.6	7.8	9.9	12.0	14.1	c	14 9.89	57 4 5.0 2.7	III 47.380	10 14 36.52	18 16 59.08	18 2894
175	7.9	......	......	......	......	......	......	......	53 48 5.0 2.0	III 42.030	10 16 0	14 59 6.72	14 3093
176	9.4	22.0	24.0	26.2	28.4	30.6	c	16 26.25	53 56 5.0 0.7	V 47.350	10 16 53.06	-15 8 49.53	14 3098

Reduction Elements. Zones 20 and 21.

	OBSERVED.			ADOPTED.		
1894.	c	b	a	c	b	a
	s	s	s	s	s	s
March 3.3....	+0.330	−0.015	+0.519 +0.543	+0.296	−0.022	+0.571
3.5....	+0.263	−0.029	+0.652			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		α Leporis		γ Leporis		κ Orionis		α Canis Majoris		Piazzi VII. 85		26 Monocerotis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		56 44 4.30		61 18 4.00		48 32 3.90		55 24 3.80		47 36 3.10		48 8 3.25	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	43.380	5 2.11	46.010	5 51.25	46.200	5 55.73	44.710	5 27.51	47.300	6 16.60	45.700	5 46.29
II	Red. to Mer......	.360	1.63	45.925	1.58	.190	1.70	.690	1.65	.280	1.71	.650	1.71
VI	Inclination	.190		.740		.000		.550		.100		.520	
VII	Refraction	.135	1 29.2	.720	1 47.0	45.950	1 6.4	.455	1 25.3	.050	1 4.7	.480	1 6.0
		4 Navis		Lalande 16304		Piazzi VIII. 227		Lalande 18817		Lalande 19433		λ Hydrae	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		53 8 3.10		51 6 3.90		54 34 3.20		59 28 4.35		57 20 3.85		50 40 3.70	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	45.510	5 42.62		5 47.52	43.245	4 59.23	45.780	5 47.42	44.990	5 32.25	44.140	5 16.50
II	Red. to Mer......	.500	1.67	45.790	1.70	.170	1.65	.730	1.59	.940	1.63	.080	1.69
VI	Inclination	.300		.590	0.82	.030		.570		.750		43.960	
VII	Refraction	.270	1 18.9	.580	1 13.4	.010	1 23.4	.510	1 40.8	.720	1 32.9	.910	1 12.8
		22 Sextantis		μ Hydrae									
		° ′ ″		° ′ ″									
CIRCLE READING.		46 22 3.60		55 8 3.45									
		r	′ ″	r	′ ″								
I	Microm. Eq......	46.510	6 1.34	43.220	4 58.36								
II	Red. to Mer......	.460	1.73	.120	1.65								
VI	Inclination	.290		42.980									
VII	Refraction	.260	1 2.7	.950	1 25.7								

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
α Leporis	5 27 53. 19	11	+0. 80	+ 9. 86	56 50 37. 2	39. 3
γ Leporis	5 39 52. 53	11	+0. 85	+ 9. 90	61 25 43. 8	39. 3
κ Orionis	5 42 33. 75	11	+0. 72	+ 9. 90	48 39 7. 7	39. 3
δ Ursæ Minoris S. P.	6 6 7. 62	5	+3. 07	[+ 9. 23]	305 34	....
α Canis Majoris	6 40 18. 84	11	+0. 79	+10. 00	55 30 58. 3	39. 9
Piazzi VII. 85	7 16 47. 42	11	+0. 71	+10. 02	47 43 26. 1	39. 3
26 Monocerotis	7 36 1. 46	11	+0. 72	+ 9. 92	48 14 57. 2	39. 9
4 Navis	7 40 54. 45	11	+0. 76	+ 9. 96	53 15 6. 3	39. 9
Groombridge 1374	7 47 25. 36	11	−0. 19	[+10. 04]	324 44	....
Lalande 16304	8 13 12. 72	11	+0. 74	+ 9. 90	51 13 7. 3	39. 5
Piazzi VIII. 227	8 53 36. 07	11	+0. 78	+10. 00	54 40 27. 5	40. 0
Lalande 18817	9 28 10. 18	11	+0. 83	+10. 06	59 35 34. 2	40. 4
Lalande 19433	9 49 42. 80	11	+0. 81	+10. 07	57 27 10. 6	38. 4
λ Hydrae	10 5 15. 95	11	+0. 74	+10. 02	50 46 34. 7	40. 0
22 Sextantis	10 12 12. 52	11	+0. 70	+10. 07	46 29 9. 4	40. 6
30 H. Camelopardalis	10 18 15. 70	6	−0. 98	[+ 9. 50]	315 50	....
μ Hydrae	10 20 48. 55	11	+0. 78	+ 9. 96	55 14 29. 2	39. 9

h		s
5. 875	*dt*	+9. 915
	Hourly rate	+0. 0286

Adopted Equator Point..........38° 56′ 39″. 69

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 30	30. 115	47. 8	49. 7
6 6	30. 115	46. 4	48. 2
7 0	30. 125	44. 8	47. 2
7 50	30. 135	44. 2	44. 9
8 20	30. 135	43. 8	44. 3
9 10	30. 135	42. 7	43. 3
9 40	30. 135	41. 8	41. 6
10 25	30. 145	40. 5	40. 6

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0						
			52°	53°	54°	55°	56°	57°	58°
°	s	h m	s	s	s	s	s	s	s
52	+0. 752	5 30	......	+15. 855	+15. 707	+15. 559	+15. 408	+15. 255	......
53	0. 762	6 0	......	15. 694	15. 547	15. 397	15. 245	15. 092	+14. 936
54	0. 772	6 30	......	15. 574	15. 428	15. 279	15. 130	14. 980	14. 827
55	0. 782	7 0	......	15. 495	15. 356	15. 212	15. 068	14. 925	14. 776
56	0. 792	7 30	......	15. 462	15. 327	15. 192	15. 052	......	......
57	+0. 802	8 0	......	15. 472	15. 347	15. 221	15. 092	14. 961	......
		8 30	......	15. 526	15. 413	15. 297	15. 182	15. 062	14. 943
		9 0	......	15. 626	15. 525	15. 423	15. 320	15. 213	15. 108
		9 30	+15. 849	15. 763	15. 678	15. 593	15. 505	15. 416	15. 323
		10 0	+16. 012	15. 944	15. 874	15. 805	15. 734	15. 662	15. 587
		10 30	......	+16. 160	+16. 107	+16. 055	+16. 001	+15. 947	+15. 892

APPARENT RIGHT ASCENSION.	$D=$ Z. D. S. to 1894.0							R					
	52°	53°	54°	55°	56°	57°	58°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″	″
5 30	....	−2. 47	−2. 75	−3. 03	−3. 30	−3. 57	....	76. 10	78. 90	81. 83	84. 92	88. 15	91. 56
6 0	....	2. 56	2. 83	3. 10	3. 36	3. 62	−3. 87	76. 31	79. 12	82. 05	85. 15	88. 39	91. 81
6 30	....	2. 75	2. 99	3. 25	3. 50	3. 73	3. 97	76. 42	79. 23	82. 17	85. 27	88. 51	91. 94
7 0	....	3. 00	3. 23	3. 46	3. 69	3. 92	....	76. 51	79. 32	82. 26	85. 37	88. 61	92. 04
7 30	....	3. 35	3. 55	3. 76	3. 96	....	....	76. 74	79. 56	82. 51	85. 62	88. 88	92. 32
8 0	....	3. 76	3. 94	4. 11	4. 29	4. 46	....	76. 93	79. 76	82. 72	85. 84	89. 10	92. 56
8 30	....	4. 23	4. 37	4. 52	4. 68	4. 81	4. 95	77. 02	79. 85	82. 81	85. 94	89. 21	92. 66
9 0	....	4. 78	4. 89	5. 00	5. 10	5. 20	5. 30	77. 11	79. 95	82. 91	86. 04	89. 31	92. 77
9 30	−5. 28	5. 35	5. 44	5. 50	5. 58	5. 63	5. 69	77. 32	80. 17	83. 14	86. 28	89. 56	93. 03
10 0	−5. 95	5. 98	6. 01	6. 05	6. 08	6. 10	6. 12	77. 50	80. 35	83. 33	86. 48	89. 76	93. 24
10 30	....	−6. 64	−6. 63	−6. 61	−6. 60	−6. 59	−6. 57	77. 62	80. 48	83. 46	86. 62	89. 91	93. 39

1894 MARCH 6. ZONE 22. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	9.0	27.6	29.8	31.9	34.1	36.3	c	15 31.95	54	56	5.0	2.2	III	39.530	6 16 0.82	−16 4 37.15	−16 1440
2	9.2	2.7	4.9	6.9	8.8	10.8	e	15 37.18	54	56	"	"	V	42.560	6 16 6.04	16 5 36.51	16 1441
3	8.8	23.1	25.5	27.6	31.7	33.3	$c_3\,d_2$	16 23.24	54	56	"	"	V A	44.320	6 16 52.09	16 9 23.38	16 1447
4	8.7	56.8	58.6	0.7	2.5	4.7	a	20 30.26	55	10	5.0	2.2	I	44.140	6 20 59.07	16 20 6.34	16 1475
5	8.6	55.9	57.9	0.1	2.1	4.2	c	21 0.05	55	30	5.0	3.9	III	(45).190	6 21 28.81	16 40 30.19	16 1479
6	8.7	45.8	47.8	49.9	52.1	54.0	c	21 49.93	55	30	"	"	III	45.010	6 22 18.69	16 40 27.22	16 1484
7	8.9	1.4	3.6	5.8	7.9	10.1	c	23 5.77	54	54	5.0	3.7	V	45.090	6 23 34.61	16 4 29.28	16 1491
8	8.2	54.2	56.0	58.1	0.0	2.3	a	24 27.94	56	34	5.0	3.8	III	46.010	6 24 56.54	17 44 50.65	17 1512
9	9.5	16.0	18.1	20.1	22.5	24.6	c	25 20.27	54	32	5.0	1.4	III	43.510	6 25 49.15	15 41 56.59	15 1408
10	9.6	49.5	51.9	53.8	55.6	57.7	e	25 24.12	54	32	"	"	V B	47.360	6 25 53.01	−15 39 59.16	−15 1409
11	8.0	8.2	10.0	11.9	13.9	16.0	a	27 41.52	54	36	5.0	1.6	III	43.360	6 28 10.38	−15 45 55.27	−15 1423
12	8.4	14.4	16.1	18.1	20.0	22.1	a	32 47.83	55	44	5.0	3.6	III	48.310	6 33 16.52	−16 55 36.30	−16 1546

Reduction Elements. Zone 22.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 6.3....	+0.272	−0.216	+0.207	+0.272	−0.216	+0.207

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		η Leporis		5 Monocerotis		6 Monocerotis		ξ² Canis Majoris	
CIRCLE READING.		° ′ ″ 53 2 2.30		° ′ ″ 45 4 4.10		° ′ ″ 49 32 4.20		° ′ ″ 61 42 2.95	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......		4 39.00	47.260	6 16.58	42.490	4 44.51	46.020	5 51.49
II	Red. to Mer......		1.67	.275	1.74	.430	1.70	45.940	1.57
VI	Inclination	42.090	2.04	.120		.230		.740	
VII	Refraction.......	.010	1 14.6	.070	56.6	.210	1 6.1	.750	1 44.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
η Leporis	5 51 21.85	11	+0.32	+13.06	53 7 59.6	42.6
δ Ursæ Minoris S. P..	6 6 7.46	7	+0.37	[+13.15]	305 34	....
5 Monocerotis	6 9 28.31	11	+0.27	+13.29	45 11 19.0	45.0
6 Monocerotis	6 12 23.44	11	+0.30	+13.14	49 37 56.5	44.0
ξ² Canis Majoris	6 30 24.13	11	+0.38	+13.11	61 49 40.8	43.7
24 H. Camelopardalis.	6 44 27.33	10	−0.12	[+13.19]	321 50	....

h		s
6.185............*dt*		+13.150
	Hourly rate	0.0000
		° ′ ″
	Adopted Equator Point..........	38 56 43.82

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 12	29.805	63.0	63.4
6 50	29.805	61.8	60.6

Notes.
12, 24 H. Camelop. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. S. to 1894.0				*R*			
			54°	55°	56°	57°	54°	55°	56°	57°	54° 30′	55°	56°	57°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
54	+0.323	6 0	+15.605	+15.456	+15.304	+15.152	−2.86	−3.13	−3.39	−3.66	78.60	80.06	83.10	86.28
55	0.330	6 30	15.485	15.337	15.187	+15.038	3.07	3.33	3.58	−3.83	78.96	80.43	83.48	86.68
56	+0.338	7 0	+15.407	+15.264	+15.120	......	−3.36	−3.61	−3.84	....	79.30	80.78	83.85	.....

1894 MARCH 7. ZONE 23. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.6	3.8	6.0	7.9	9.7	11.7	e	47 38.27	54 20 5.0 1.7	VII 43.970	5 48 7.68	−15 29 53.28	−15 1200
2	9.0	49.2	51.1	53.0	55.0	57.2	a	54 22.96	56 44 5.0 2.0	I 46.365	5 54 52.01	17 54 44.47	17 1319
3	9.3	10.7	12.4	14.4	16.3	18.6	a	56 44.23	56 8 5.0 2.6	I 44.450	5 57 13.36	17 18 7.77	17 1329
4	8.0	51.8	54.0	56.1	0.4	2.1	$c_3 d_2$	56 51.83	56 56 5.0 3.7	V B 46.720	5 57 20.85	18 3 45.05	18 1270
5	8.5	47.2	49.4	51.5	53.8	56.0	c	57 51.59	56 56 " "	III A 44.100	5 58 20.59	18 9 19.59	18 1279
6	8.7	5.6	7.4	9.4	11.3	13.5	a	59 39.08	55 26 5.0 2.2	I 45.960	6 0 8.29	16 36 35.86	16 1347
7	8.2	48.9	51.2	53.3	55.5	57.7	c	59 53.33	56 50 5.0 2.4	V B 44.360	6 0 22.35	17 57 0.78	17 1344
8	8.2	23.1	25.5	27.4	29.4	31.4	e	59 57.41	56 50 " "	VII A 47.100	6 0 26.41	18 4 19.68	18 1291
9	8.5	13.8	16.0	18.1	20.5	22.6	c	1 18.21	56 50 " "	V 52.150	6 1 47.21	18 2 42.23	18 1301
10	8.6	44.4	46.6	48.6	50.5	52.6	e	1 18.59	56 50 " "	VII 50.260	6 1 47.59	−18 2 7.68	−18 1302
11	8.8	53.4	55.3	57.3	59.3	1.4	a	4 26.92	55 2 5.0 2.2	I 48.090	6 4 56.17	−16 13 17.82	−16 1375
12	9.5	48.0	49.9	52.0	53.8	56.0	a	5 21.52	55 2 " "	I 49.540	6 5 50.76	16 13 45.91	16 1381
13	9.1	3.1	5.0	6.9	8.9	10.1	a	6 36.59	55 2 " "	I A 49.870	6 7 5.82	16 17 6.07	16 1389
14	8.4	34.5	36.1	38.3	40.3	42.5	a	8 7.94	(54) 14 5.0 1.4	I A 46.560	6 8 37.28	15 28 1.28	15 1311
15	8.7	5.4	7.4	9.5	11.9	14.0	c	8 9.65	(54) 14 " "	III 41.580	6 8 39.00	15 23 15.11	15 1312
16	7.5	50.2	52.6	54.3	56.2	58.1	e	8 24.61	(54) 14 " "	V B 45.560	6 8 53.96	[15 21 20.25]	15 1314
17	8.2	6.3	8.5	10.4	12.3	14.2	e	8 40.65	(54) 14 " "	VII 48.520	6 9 10.01	15 25 30.58	15 1315
18	7.3	12.0	13.9	16.0	17.9	20.1	a	12 45.65	55 36 5.0 1.9	I 45.910	6 13 14.78	16 46 42.14	16 1426
19	8.5	48.3	50.4	52.5	54.8	57.0	c	12 52.61	55 36 " "	III(B) 43.960	6 13 21.75	16 42 54.58	16 1427
20	8.8	43.2	45.5	47.4	49.3	51.4	e	13 17.61	55 36 " "	V 48.700	6 13 46.74	−16 47 38.98	−16 1429
21	8.5	38.7	40.6	42.7	44.6	46.8	a	16 12.32	55 32 5.0 2.7	I B 40.700	6 16 41.46	−16 37 52.75	−16 1446
22	8.0	19.0	21.2	23.3	25.3	27.9	c	16 23.35	55 32 " "	III A 44.110	6 16 52.47	16 45 24.92	16 1448
23	7.9	22.8	25.0	27.2	29.4	31.6	c	17 27.21	55 32 " "	III B 50.070	6 17 56.34	16 40 53.50	16 1456
24	7.8	41.4	43.6	45.7	47.8	50.0	c	18 45.71	55 14 5.0 1.6	III 46.365	6 19 14.87	16 24 54.61	16 1461
25	8.0	19.1	21.1	23.5	25.3	27.8	c	19 23.37	55 0 5.0 1.5	V 44.120	6 19 52.56	16 10 13.11	16 1467
26	8.8	50.1	52.5	54.4	56.2	58.3	e	19 24.65	55 0 " "	VII 44.040	6 19 53.84	16 10 13.05	16 1468
27	8.8	55.0	57.2	59.4	1.7	3.9	c	20 59.45	55 44 5.0 1.3	V B 43.780	6 21 28.54	16 50 57.07	16 1478
28	8.4	29.5	31.5	33.4	35.4	37.7	a	22 3.19	55 44 " "	III A 40.690	6 22 32.26	16 56 22.68	16 1486
29	8.9	55.8	57.6	59.5	1.6	3.9	a	23 29.42	56 10 5.0 1.5	I B 34.830	6 23 58.45	17 14 6.04	17 1505
30	7.7	38.4	40.5	42.6	45.0	47.2	c	23 42.75	56 10 " "	V A 46.090	6 24 11.75	−17 24 9.22	−17 1506
31	9.4	52.5	54.5	56.6	59.0	1.2	c	24 56.77	56 10 " "	III B 48.220	6 25 25.78	−17 18 23.46	−17 1513
32	9.0	1.6	3.2	5.3	7.2	9.5	a	26 35.13	56 10 " "	I A 49.620	6 27 4.12	17 25 14.70	17 1518
33	9.2	52.6	54.4	56.6	58.6	0.7	a	27 26.37	56 26 5.0 3.0	I B 45.030	6 27 55.34	17 33 23.85	17 1524
34	8.0	20.0	21.9	23.9	25.9	28.1	a	27 53.76	56 26 " "	III 49.690	6 28 22.72	17 38 6.87	17 1528
35	8.0	48.2	50.0	51.9	53.9	55.9	a	29 21.52	54 46 5.0 1.8	I 43.580	6 29 50.71	15 56 4.10	15 1432
36	8.7	0.4	2.2	4.2	6.3	8.5	a	29 33.86	54 46 " "	III 47.530	6 30 3.05	15 57 21.25	15 1433
37	8.5	47.7	49.8	51.7	53.9	56.1	c	29 51.85	54 46 " "	III 48.030	6 30 21.04	15 57 30.90	15 1437
38	8.0	34.8	36.9	39.1	33.4	34.9	$c_3 d_2$	30 34.82	54 46 " "	V B 52.030	6 31 4.01	15 55 36.64	15 1446
39	8.1	17.9	20.1	22.3	24.1	26.0	e	30 52.45	54 46 " "	VII A 49.600	6 31 21.62	16 1 17.23	15 1448
40	8.6	44.1	46.0	48.3	50.5	52.5	c	32 48.29	54 46 " "	III B 39.160	6 33 17.48	−15 51 31.26	−15 1459
41	9.0	22.6	24.5	26.5	28.4	30.6	a	33 56.06	54 46 " "	I B 43.470	6 34 25.24	−15 52 52.14	−15 1463
42	9.2	24.7	26.8	29.1	33.4	35.0	$c_3 d_2$	34 24.77	56 4 5.0 2.2	V 41.140	6 34 53.76	17 13 27.63	17 1572
43	8.0	4.4	6.6	8.8	11.0	13.1	c	35 8.79	56 4 " "	V B 47.000	6 35 37.79	17 12 7.17	17 1578
44	9.0	12.1	14.0	15.9	17.9	20.0	a	36 45.54	54 56 5.0 2.1	I 45.790	6 37 14.68	16 6 50.62	16 1572
45	9.1	42.2	45.0	46.6	50.4	52.8	$b_1 c_2$	36 54.96	54 56 " "	IV A 46.450	6 37 24.09	16 10 18.95	16 1573
46	8.9	32.5	34.5	36.7	38.9	41.0	c	37 36.73	54 56 " "	III 48.590	6 38 5.87	16 7 46.15	16 1576
47	9.2	5.4	7.4	9.5	11.6	13.7	c	38 9.53	54 56 " "	V B 44.830	6 38 38.68	16 3 24.11	16 1580
48	9.5	4.1	5.9	7.8	9.8	12.0	a	41 37.47	54 48 5.0 0.5	I 46.340	6 42 6.62	15 59 2.39	15 1507
49	8.3	42.3	44.1	46.0	48.0	50.1	a	42 15.64	54 48 " "	I 41.390	6 42 44.79	15 57 28.51	15 1511
50	8.4	40.6	42.5	44.5	46.4	48.8	a	43 14.28	55 56 5.0 2.0	I 46.270	6 43 43.27	−17 7 5.88	−17 1631
51	.....	20.4	22.3	24.3	26.3	28.4	a	43 54.07	55 56 " "	III A 42.000	6 44 23.05	−17 8 59.87	−17 1634
52	9.4	44.8	46.7	48.7	50.6	52.8	a	45 18.44	55 56 " "	I 48.860	6 45 47.42	17 7 56.23	17 1644
53	7.8	16.5	18.6	20.9	23.1	25.1	c	45 20.85	55 56 " "	III A 46.790	6 45 49.82	17 10 31.80	17 1645
54	8.6	48.8	50.7	52.9	55.2	57.4	c	45 53.01	55 56 " "	III(A) 48.590	6 46 21.98	17 11 6.33	17 1649
55	8.2	56.5	58.5	0.7	2.9	5.0	c	47 0.73	55 56 " "	III 47.340	6 47 29.71	17 7 30.01	17 1654
56	9.3	33.2	35.6	37.5	39.3	41.4	e	47 7.60	55 56 " "	V A 46.360	6 47 36.57	17 10 26.01	17 1656
57	9.7	29.1	31.3	33.1	35.1	37.0	e	48 3.32	55 56 " "	VII A 47.530	6 48 32.29	17 10 50.10	17 1661
58	9.0	11.8	13.8	16.0	18.1	20.4	c	49 16.03	56 58 5.0 2.3	V 47.520	6 49 44.86	18 9 39.52	18 1598
59	9.2	37.8	39.6	41.5	43.6	45.8	a	51 11.06	53 46 5.0 0.7	I 46.500	6 51 40.32	14 57 7.67	14 1648
60	8.8	35.1	37.0	38.8	40.9	43.0	a	52 8.30	53 20 5.0 0.9	I 44.070	6 52 37.62	−14 30 20.89	−14 1658
61	8.7	6.7	8.9	10.9	13.1	15.5	c	52 11.03	53 20 " "	III A 49.710	6 52 40.34	−14 35 23.14	−14 1659
62	8.6	3.4	5.2	7.3	9.3	11.5	a	53 36.91	55 0 5.0 1.5	III 44.730	6 54 6.00	16 10 40.74	16 1685
63	8.5	37.2	39.2	41.0	42.9	45.1	a	55 10.65	55 0 " "	I 45.650	6 55 39.74	16 10 57.22	16 1701
64	9.2	27.0	28.9	30.8	32.8	34.8	a	56 0.45	55 8 5.0 1.7	III 43.110	6 56 29.52	16 18 11.60	16 1705
65	9.8	28.1	29.9	32.0	33.8	36.0	a	57 1.59	55 24 5.0 1.9	I B 42.680	6 57 30.63	16 30 50.72	16 1715
66	8.2	3.2	5.3	7.5	9.6	11.9	c	57 7.51	55 24 " "	V A 48.440	6 57 36.53	16 39 9.08	16 1716
67	7.7	47.2	49.5	51.6	53.8	55.9	c	57 51.61	55 24 " "	V B 50.050	6 58 20.64	−16 33 14.74	−16 1723

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
68	8.1	4.2	6.1	8.0	10.0	12.1	a	0 37.71	55 28	5.0	3.3	I B	35.140	7 1 6.74	−16 32 29.89	−16 1753
69	9.0	51.4	54.1	56.2	58.3	0.6	c	1 56.13	55 28	"	"	V B	44.350	7 2 25.15	16 35 29.17	16 1769
70	9.0	7.6	10.1	12.1	13.9	16.0	e	2 42.23	55 28	"	"	VII (B)	36.410	7 3 11.26	−16 32 59.79	−16 1782
71	9.0	32.6	34.5	36.5	38.5	40.8	a	6 6.13	54 48	5.0	1.4	I	44.020	7 6 35.23	−15 58 31.06	−15 1686
72	9.2	54.4	56.3	58.2	0.4	2.5	a	6 27.91	54 48	"	"	I	41.940	7 6 57.01	15 57 51.65	15 1689
73	9.3	13.3	15.2	16.9	19.0	21.1	a	7 46.65	54 48	"	"	I A	46.390	7 8 15.74	16 2 30.22	15 1698
74	9.2	48.2	50.1	52.4	54.6	56.6	c	7 52.39	54 48	"	"	III	44.940	7 8 21.49	15 58 51.27	15 1699
75	9.3	45.4	47.5	49.2	51.3	53.6	a	9 18.94	54 48	"	"	I B	42.420	7 9 48.04	15 54 49.93	15 1713
76	7.8	23.2	25.1	27.1	29.2	31.4	a	10 56.76	54 48	"	"	I A	49.730	7 11 25.84	16 3 35.36	15 1732
77	9.2	44.0	45.9	47.8	49.7	52.0	a	12 17.54	55 32	5.0	1.8	I	43.770	7 12 46.53	16 42 31.63	16 1873
78	8.9	35.1	36.9	38.9	40.9	43.1	a	13 8.45	54 16	5.0	1.0	III	44.830	7 13 37.61	15 26 50.09	15 1748
79	8.8	30.9	32.6	34.5	36.6	38.8	a	14 4.19	54 34	5.0	1.2	III	45.270	7 14 33.31	15 44 59.84	15 1758
80	8.0	28.5	30.6	32.8	34.9	37.1	c	14 32.79	54 34	"	"	III B	46.240	7 15 1.92	−15 42 6.20	−15 1766
81	9.2	6.6	9.1	11.1	12.9	14.8	e	14 41.32	54 34	"	"	V B	43.290	7 15 10.45	−15 41 11.70	−15 1767
82	9.5	11.8	13.6	15.9	18.0	20.3	c	16 15.93	54 58	5.0	2.4	III	40.490	7 16 45.00	16 7 31.64	....
83	7.6	44.7	46.7	48.8	51.0	53.2	c	18 48.89	54 30	5.0	1.3	V	43.280	7 19 18.02	15 40 25.76	15 1799
84	8.8	35.0	36.7	39.0	40.9	43.0	a	20 8.43	54 30	"	"	I A	48.430	7 20 37.54	15 45 14.20	15 1815
85	8.8	4.8	6.5	8.5	10.4	12.5	a	21 38.05	54 30	"	"	I	52.965	7 22 7.17	15 43 28.04	15 1823
86	8.0	13.9	15.9	17.8	19.7	21.9	a	21 47.44	54 30	"	"	III	46.950	7 22 16.56	15 41 35.42	15 1825
87	8.6	21.9	24.0	26.0	27.9	30.0	e	21 56.35	54 42	5.0	1.8	V A	47.800	7 22 25.44	15 57 7.09	15 1826
88	8.5	15.8	17.9	19.9	21.8	23.7	e	22 50.21	54 42	"	"	V	46.290	7 23 19.31	15 53 25.54	15 1837
89	9.8	45.0	47.4	49.3	51.4	53.2	e	23 19.67	54 42	"	"	VII B	34.610	7 23 48.78	15 46 32.43	15 1843
90	8.0	5.1	7.1	8.9	10.9	13.0	a	25 38.52	54 42	"	"	III B	35.860	7 26 7.63	−15 46 54.42	−15 1868
91	8.8	53.3	55.4	57.6	59.8	1.9	c	25 57.61	54 42	"	"	III A	37.390	7 26 26.70	−15 53 49.11	−15 1871
92	8.3	31.9	34.0	35.9	37.8	39.9	a	27 5.43	54 42	"	"	III	40.420	7 27 34.53	15 51 34.21	15 1884
93	9.7	43.5	45.5	47.4	49.3	51.5	a	28 16.97	54 42	"	"	I B	46.370	7 28 46.07	15 50 13.98	15 1895
94	8.3	......	12.2	14.1	16.1	18.3	a	28 43.64	53 54	5.0	1.5	III	44.100	7 29 12.84	15 4 42.98	14 1973
95	8.9	26.5	28.5	30.4	32.4	34.5	a	29 59.85	53 40	5.0	1.7	III B	49.590	7 30 29.08	14 49 15.24	14 1982
96	8.7	19.8	22.0	24.0	26.2	28.3	c	30 24.07	53 40	"	"	V	44.890	7 30 53.30	14 50 59.91	14 1984
97	8.0	29.3	31.7	33.5	35.3	37.3	e	31 4.05	53 0	5.0	1.0	V	45.500	7 31 33.36	14 11 9.73	14 2002
98	9.3	8.1	10.0	11.9	13.9	16.0	a	35 41.29	53 6	5.0	1.6	III	44.540	7 36 10.59	14 16 52.57	14 2089
99	9.2	59.8	2.0	4.2	6.3	8.5	c	36 4.17	53 6	"	"	III	43.900	7 36 33.47	14 16 40.57	14 2101
100	8.8	1.0	3.2	5.0	6.9	9.0	e	36 35.39	54 52	5.0	1.4	VII	47.120	7 37 4.46	−16 3 49.82	−15 1981
101	8.6	22.8	25.0	27.1	31.4	32.8	c_3 d_2	37 22.82	54 52	"	"	(V) A	43.650	7 37 51.89	−16 5 55.69	−15 1989
102	8.9	50.8	53.3	55.1	57.0	59.0	e	37 25.41	54 52	"	"	VII	43.950	7 37 54.49	16 2 49.88	15 1991
103	9.2	14.9	17.1	19.3	21.1	23.0	e	38 49.46	54 52	"	"	V B	49.490	7 39 18.54	16 1 22.17	15 2004
104	9.4	31.4	33.8	35.6	37.6	39.6	e	39 5.97	54 52	"	"	VII	46.440	7 39 35.04	16 3 38.07	15 2007
105	8.7	23.3	25.7	27.5	29.3	31.4	e	39 57.81	54 52	"	"	VII	47.350	7 40 26.88	16 3 55.80	15 2017
106	9.4	15.6	17.7	19.8	22.0	24.0	c	41 19.83	54 6	5.0	1.2	V	46.210	7 41 49.00	15 17 31.08	15 2035
107	8.8	42.8	44.5	46.7	48.8	51.0	a	43 16.21	54 6	"	"	I	49.370	7 43 45.38	15 18 28.66	15 2054
108	10.0	5.7	7.9	10.0	12.1	14.4	c	45 10.03	54 6	"	"	V	44.700	7 45 39.19	15 17 4.05	15 2077
109	9.4	19.5	21.7	23.8	26.0	28.1	c	46 23.83	54 6	"	"	III B	36.230	7 46 53.01	15 11 9.49	15 2092
110	8.2	21.2	23.3	25.4	27.7	29.7	c	47 25.47	54 6	"	"	V B	37.700	7 47 54.65	−15 11 39.51	−15 2101
111	8.0	15.3	17.7	19.5	21.2	23.0	e	47 49.82	54 6	"	"	V B	41.250	7 48 18.99	−15 12 47.26	−15 2105
112	9.0	33.4	35.7	37.8	39.5	41.5	e	48 8.07	54 6	"	"	VII B	37.450	7 48 37.25	15 11 36.44	15 2108
113	7.7	59.5	1.2	2.9	5.0	7.3	a	50 32.63	54 8	5.0	1.1	III	43.920	7 51 1.79	15 18 50.11	15 2133
114	7.9	54.5	56.4	58.4	0.4	2.5	a	51 27.88	54 8	"	"	I B	43.570	7 51 57.05	15 15 29.80	15 2143
115	8.7	53.6	55.5	57.5	59.5	1.7	a	52 27.37	56 30	5.0	2.2	I	45.890	7 52 56.25	17 41 34.03	17 2247
116	9.0	39.4	41.4	43.6	45.8	48.0	c	52 43.65	56 30	"	"	III A	41.710	7 53 12.52	17 43 29.54	17 2249
117	8.1	21.3	23.5	25.7	27.9	30.0	c	53 25.69	53 46	5.0	1.2	V	47.440	7 53 54.90	14 57 59.10	14 2309
118	8.5	15.9	17.6	19.8	22.0	24.2	c	54 19.91	55 44	5.0	2.7	V	43.000	7 54 48.88	16 54 41.29	16 2229
119	9.2	18.3	20.7	22.6	24.4	26.4	e	54 52.71	55 44	"	"	V A	44.220	7 55 21.68	16 58 17.75	16 2233
120	8.7	5.3	7.5	9.6	11.8	14.0	c	56 9.64	55 44	"	"	III B	47.730	7 56 38.62	−16 52 58.19	−16 2247
121	9.0	56.5	58.4	0.4	2.3	4.5	a	57 30.06	55 26	5.0	2.4	I	44.490	7 57 59.08	−16 37 6.59	−16 2255
122	8.7	37.6	39.7	41.5	43.6	45.8	a	58 11.19	54 52	5.0	2.2	III B	48.360	7 58 40.28	16 1 8.30	15 2222
123	9.1	14.4	16.3	18.6	20.6	22.8	c	58 18.55	54 52	"	"	V (B)	44.730	7 58 47.64	16 0 0.83	15 2223
124	8.2	50.2	52.4	54.6	56.8	59.1	c	58 54.63	54 52	"	"	III	45.920	7 59 23.71	16 3 34.52	15 2232
125	9.3	9.7	11.5	13.6	15.4	17.7	a	0 43.14	54 52	"	"	I	49.330	8 1 12.22	16 4 38.42	15 2250
126	8.1	46.9	48.9	51.0	53.4	55.5	c	0 51.15	54 52	"	"	III A	46.200	8 1 20.23	16 6 53.80	15 2253
127	9.1	26.5	28.4	30.3	32.4	34.6	a	1 59.99	54 52	"	"	III B	48.360	8 2 29.08	16 1 10.03	15 2262
128	9.5	13.3	15.1	17.0	19.0	21.2	a	3 46.67	54 52	"	"	I B	47.570	8 4 15.77	16 0 54.01	15 2273
129	9.4	29.4	31.2	33.3	35.1	37.3	a	5 2.81	54 52	"	"	I B	48.460	8 5 31.91	16 1 11.51	15 2291
130	10.0	35.4	37.2	39.0	41.3	43.3	a	6 8.79	54 52	"	"	III B	40.140	8 6 37.90	−15 58 35.37	−15 2299
131	8.2	8.3	10.4	12.5	14.7	16.9	c	6 12.57	54 52	"	"	V	37.390	8 6 41.67	−16 0 56.99	15 2300
132	8.8	6.9	9.0	11.1	13.0	15.5	c	7 11.11	54 52	"	"	V A	49.460	8 7 40.20	16 8 0.16	16 2345
133	8.8	16.9	18.9	21.3	23.3	25.5	c	10 21.19	55 8	5.0	2.0	III	47.830	8 10 50.26	16 20 16.56	16 2368
134	8.6	1.7	3.7	5.7	7.6	9.8	a	11 35.30	55 8	"	"	I	46.870	8 12 4.38	16 19 57.00	16 2376
135	9.3	53.8	55.7	57.7	59.7	1.8	a	15 27.42	55 48	5.0	2.1	III B	35.140	8 15 56.44	16 53 6.87	16 2403
136	8.3	48.0	50.0	52.2	54.4	56.6	c	15 52.25	55 48	"	"	V A	44.620	8 16 21.26	17 2 34.45	16 2404
137	9.7	16.0	18.0	20.3	22.3	24.6	c	17 20.25	55 48	"	"	V A	(44).630	8 17 49.26	17 2 35.27	16 2414
138	8.6	6.1	8.1	10.3	12.5	14.6	c	18 10.33	55 48	"	"	VII B	45.780	8 18 39.35	16 56 33.48	16 2421
139	......	20.0	22.2	24.4	26.7	28.9	c	18 24.45	55 48	"	"	VII	43.790	8 18 53.47	16 59 8.18	16 2423
140	7.5	3.2	5.2	7.1	9.1	11.2	a	20 36.88	55 54	...	...	....	...	8 21 5.89	−17 6 47	−16 2442

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
141	7.9	42.2	44.4	46.4	48.4	50.3	e	21 16.44	56 38 5.0 3.7	VII(B)39.430	8 21 45.38	—17 44 37.25	—17 2493
142	9.0	3.3	5.0	7.0	9.0	11.0	a	25 36.56	54 28 5.0 1.8	I 42.540	8 26 5.75	15 38 38.43	15 2470
143	8.0	25.3	27.2	29.2	31.1	33.3	a	25 58.72	54 28 " "	I 46.970	8 26 27.90	15 40 2.91	15 2475
144	8.6	48.9	50.9	53.4	55.5	57.7	c	31 53.29	56 20 5.0 2.5	III 44.160	8 32 22.29	17 31 19.51	17 2580
145	9.5	42.0	44.0	45.8	47.8	50.0	a	33 15.43	54 32 5.0 1.7	III 48.110	8 33 44.63	15 44 29.52	15 2531
146	9.5	20.8	23.0	25.0	27.2	29.5	c	33 25.11	54 32 " "	III 50.860	8 33 54.30	15 45 21.94	15 2533
147	9.5	43.8	45.7	47.9	52.0	53.5	$c_3 d_2$	33 43.59	54 32 " "	V B 45.530	8 34 12.80	15 40 29.83	15 2534
148	7.7	29.0	31.3	33.3	35.0	37.0	e	34 3.54	54 32 " "	V B 46.600	8 34 32.75	15 40 50.34	15 2538
149	9.4	37.4	39.5	41.6	43.8	45.9	c	35 41.65	54 32 " "	III 41.070	8 36 10.86	15 42 16.47	15 2547
150	9.0	38.2	40.0	41.9	43.9	46.0	a	37 11.50	54 32 " "	I B 47.390	8 37 40.72	—15 41 3.30	—15 2557
151	9.4	44.9	46.9	49.0	50.9	53.0	a	38 18.38	54 4 5.0 0.3	I 43.620	8 38 47.64	—15 15 2.24	—15 2565
152	8.0	39.6	41.7	44.0	46.1	48.1	c	38 43.91	55 28 5.0 1.7	III 44.210	8 39 13.03	16 39 20.17	16 2566
153	8.5	2.8	4.9	7.0	11.3	12.9	$c_3 d_2$	39 2.77	55 28 " "	V B 40.880	8 39 31.90	16 35 6.12	16 2569
154	9.3	19.5	21.7	23.9	26.1	28.2	c	40 23.89	56 58 5.0 3.2	V 44.820	8 40 52.86	—18 9 39.46	—18 2466

1894 MARCH 7. ZONE 24. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

155	8.5	3.8	5.6	7.6	9.6	11.8	a	0 37.45	56 12 5.0 2.8	I 44.650	9 1 6.60	—17 23 37.68	—17 2742
156	8.4	35.4	37.1	39.1	41.1	43.3	a	1 8.96	56 12 " "	I B 47.220	9 1 38.11	17 21 14.53	17 2745
157	8.7	20.9	22.6	24.8	26.8	28.9	a	1 54.57	56 12 " "	III A 46.490	9 2 23.72	17 27 28.12	17 2752
158	8.1	26.8	28.7	30.7	32.6	34.8	a	3 • 0.49	56 12 " "	I A 47.640	9 3 29.64	17 27 48.67	17 2757
159	9.0	41.1	43.1	45.0	47.0	49.2	a	3 14.85	56 12 " "	III A 43.910	9 3 44.01	17 26 39.48	17 2759
160	9.0	59.2	1.5	3.3	5.1	7.0	e	3 33.73	53 54 5.0 0.8	V 43.150	9 4 3.10	15 5 5.87	14 2759
161	8.7	37.2	39.5	41.6	43.2	45.2	e	4 11.83	54 0 5.0 1.3	VII 42.730	9 4 41.20	15 11 0.09	15 2714
162	7.8	37.5	39.6	41.5	43.4	45.4	e	5 12.07	53 18 5.0 1.3	VII 44.540	9 5 41.50	14 29 32.97	14 2769
163	8.0	47.5	49.6	51.7	54.0	56.1	c	6 51.79	54 32 5.0 2.2	III 46.160	9 7 21.12	15 44 5.18	15 2728
164	9.0	44.2	46.4	48.5	50.9	53.0	c	7 48.61	56 38 5.0 2.3	V 42.060	9 8 17.76	—17 48 55.50	—17 2788
165	9.2	9.8	11.9	14.1	16.3	18.4	c	8 14.11	56 38 " "	V B 44.820	9 8 43.26	—17 46 35.77	—17 2790
166	8.3	31.1	32.9	35.0	37.0	39.0	a	10 4.78	56 20 5.0 1.9	III 48.310	9 10 33.96	17 32 52.46	17 2799
167	9.1	43.4	45.3	47.3	49.1	51.5	a	11 16.84	54 40 5.0 2.1	I B 41.830	9 11 46.19	15 47 30.52	15 2749
168	8.4	35.6	37.3	39.1	41.2	43.4	a	12 8.85	54 40 " "	I A 42.040	9 12 38.19	15 54 0.29	15 2752
169	9.3	59.5	1.3	3.2	5.2	7.4	a	13 33.15	56 34 5.0 1.7	I 49.020	9 14 2.33	17 47 5.95	17 2816
170	9.2	51.8	53.8	55.7	57.6	59.9	a	14 25.56	56 34 " "	III B 34.800	9 14 54.76	17 39 25.06	17 2820
171	9.0	44.7	47.0	49.0	51.4	53.6	c	14 49.15	56 34 " "	V A 34.570	9 15 18.35	17 45 47.76	17 2821
172	8.6	1.7	4.0	5.9	7.7	9.8	e	15 35.92	56 34 " "	V A 43.120	9 16 5.12	17 48 30.80	17 2826
173	9.2	7.2	9.2	11.2	13.2	15.1	a	17 40.74	54 58 5.0 2.0	I B 47.860	9 18 10.09	16 7 28.23	15 2774
174	7.6	45.5	47.3	49.2	51.3	53.6	a	18 18.96	54 58 " "	I A 49.070	9 18 48.30	—16 14 16.97	—16 2770
175	8.6	31.7	33.5	35.4	37.2	39.5	a	19 5.00	54 50 5.0 1.6	III B 36.020	9 19 34.38	—15 55 44.48	—15 2782
176	7.9	27.0	28.8	30.7	32.7	35.0	a	20 0.38	54 50 " "	III B 41.580	9 20 29.76	15 57 30.62	15 2788
177	8.5	50.1	51.9	53.7	55.6	57.9	a	21 23.38	54 50 " "	I 40.970	9 21 52.76	16 0 29.95	15 2794
178	7.9	24.4	26.5	28.5	30.8	33.0	c	21 28.65	54 50 " "	III 40.480	9 21 58.03	16 0 41.50	15 2796
179	8.0	41.7	43.8	45.7	48.0	50.2	c	21 45.89	54 50 " "	V(A)(41).730	9 22 15.27	16 4 0.96	15 2798
180	8.8	18.6	20.9	22.7	24.7	26.6	e	21 53.07	54 50 " "	VII(A)41.930	9 22 22.45	16 4 6.14	15 2801
181	9.0	28.6	30.8	32.8	34.6	36.5	e	23 3.03	54 50 " "	VII A 43.190	9 23 32.42	16 4 30.48	15 2807
182	8.0	47.9	50.0	52.0	53.8	55.8	e	23 22.27	54 50 " "	VII(A)45.460	9 23 51.66	16 5 13.79	15 2809
183	8.2	2.6	4.2	6.4	8.3	10.5	a	32 35.92	54 38 5.0 1.9	III 41.750	9 33 5.38	15 48 49.64	15 2846
184	8.0	38.2	40.5	42.5	44.7	46.9	c	32 42.57	54 38 " "	V B 46.690	9 33 12.04	—15 47 12.93	—15 2847
185	9.0	46.1	47.8	49.8	51.7	53.9	a	34 19.39	54 38 " "	I A 46.750	9 34 48.86	—15 53 36.70	—15 2861
186	8.6	29.8	31.6	33.6	35.6	37.8	a	35 3.21	54 38 " "	I A 46.890	9 35 32.68	15 53 39.60	15 2867
187	7.9	28.6	30.3	32.2	34.2	36.4	a	37 1.81	54 16 5.0 2.0	I 44.800	9 37 31.33	15 27 46.16	15 2873
188	8.2	57.9	0.0	2.0	4.3	6.5	c	37 2.15	54 16 " "	III A 49.220	9 37 31.66	15 32 25.20	15 2874
189	8.3	38.9	41.5	43.2	45.2	47.2	e	37 13.66	54 16 " "	VII B 44.240	9 37 43.18	15 24 27.98	15 2875
190	8.7	11.1	13.3	15.2	17.1	19.0	e	38 45.51	54 54 5.0 1.9	VII B(40).800	9 39 15.00	16 1 24.72	15 2885
191	8.8	36.6	38.7	40.7	43.1	45.3	c	39 40.89	54 54 " "	V 44.010	9 40 10.37	16 5 37.11	15 2892
192	8.6	2.1	4.3	6.5	10.6	12.5	$c_3 d_2$	41 2.20	54 54 " "	VI B 35.500	9 41 31.70	15 59 43.80	15 2898
193	7.9	0.4	2.8	4.7	6.5	8.5	e	41 34.95	54 54 " "	VII 42.080	9 42 4.45	16 5 2.34	15 2900
194	8.6	19.9	22.2	24.1	26.0	28.1	e	42 54.50	54 22 5.0 2.0	V 44.990	9 43 24.04	—15 33 55.15	—15 2902
195	8.8	47.6	50.0	51.9	53.7	55.7	e	43 22.22	54 22 " "	VII A 46.930	9 43 51.76	—15 37 46.52	—15 2906
196	8.0	46.1	48.5	50.3	52.2	54.1	e	44 20.59	54 54 5.0 2.1	VII A 49.570	9 44 50.10	16 10 38.64	15 2910
197	7.9	38.8	40.9	42.8	45.4	47.4	c	45 43.07	54 12 5.0 1.9	V 47.450	9 46 12.64	15 24 42.24	15 2916
198	8.9	35.1	37.5	39.2	41.1	43.0	e	46 9.55	54 54 5.0 2.2	VII 43.140	9 46 39.08	16 5 23.91	15 2918
199	7.5	9.1	11.4	13.3	15.1	17.1	e	46 43.57	54 54 " "	VII B 48.280	9 47 13.10	16 3 49.46	15 2920
200	8.2	0.3	2.7	4.6	6.4	8.5	e	47 34.96	54 14 5.0 1.7	VII 46.040	9 48 4.54	15 26 17.36	15 2923
201	8.9	37.3	39.5	41.5	43.8	45.9	c	49 41.61	56(26) 5.0 3.3	V 49.460	9 50 11.05	17 39 29.04	17 3003
202	9.0	26.4	28.5	30.6	32.9	35.1	c	50 30.71	56(26) " "	V 45.330	9 51 0.16	17 38 10.65	17 3007
203	7.8	7.1	9.0	10.9	12.8	15.1	a	51 40.44	54 14 5.0 2.1	III 42.250	9 52 10.05	15 25 3.36	15 2938
204	9.0	49.5	51.7	53.8	55.9	58.1	c	51 53.81	54 14 " "	V B 50.210	9 52 23.42	—15 24 24.19	—15 2939
205	9.2	4.0	6.3	8.4	10.6	12.8	c	53 8.43	54 14 " "	V 43.730	9 53 38.05	—15 25 33.56	—15 2947
206	8.5	30.4	32.3	34.1	36.2	38.4	a	56 3.68	53 46 5.0 3.5	I 46.510	9 56 33.35	14 58 23.14	14 3002
207	8.8	16.1	18.1	20.2	22.4	24.6	c	56 20.29	53 46 " "	III 40.990	9 56 49.96	—14 56 39.93	—14 3003

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
208	8.4	4.6	6.7	8.9	11.0	13.2	c	57 8.89	53 28 5.0	3.6	V	41.820	9 57 38.59	−14 38 56.78	−14 3010
209	9.0	15.1	16.8	18.9	20.9	23.1	a	58 48.33	53 28 "	"	I A	49.060	9 59 18.03	14 44 24.78	14 3017
210	8.0	15.5	17.6	19.8	22.0	24.3	c	59 19.85	56 16 5.0	2.6	III	42.300	9 59 49.38	17 27 12.70	17 3055
211	8.5	49.5	51.7	53.8	56.0	58.1	c	59 53.83	55 16 5.0	2.6	V	44.900	10 0 23.43	16 28 0.83	16 2957
212	9.1	6.1	7.7	12.0	14.0	16.1	b_2 c_3	1 16.21	55 16 "	"	III (A)	47.340	10 1 45.82	16 31 59.08	16 2965
213	7.5	2.8	5.3	7.0	8.7	10.8	e	1 37.15	55 44 5.0	2.1	VII	49.090	10 2 6.74	16 57 23.63	16 2969
214	8.3	14.5	17.0	18.7	20.5	22.5	e	1 48.87	55 44 "	"	VII A	46.590	10 2 18.45	−16 59 48.95	−16 2973
215	9.1	44.6	47.0	49.0	50.6	52.7	e	2 19.01	55 44 "	"	VII A	44.840	10 2 48.60	−16 59 15.76	−16 2978
216	8.6	50.0	52.1	54.3	56.6	58.7	c	3 54.35	56 30 5.0	2.0	V	43.820	10 4 23.91	17 41 44.82	17 3071
217	7.8	......	27.2	29.1	31.0	33.0	e	3 59.17	56 30 "	"	VI B	44.860	10 4 28.73	17 38 52.92	17 3072
218	9.2	16.1	18.3	20.4	22.6	24.7	c	6 20.43	53 44 5.0	2.0	III	44.550	10 6 50.17	14 55 49.23	14 3050
219	9.1	15.0	17.0	19.1	21.3	23.6	c	7 19.21	54 0 5.0	2.1	III	47.240	10 7 48.94	15 12 41.47	14 3055
220	9.3	33.8	36.0	38.1	42.3	44.1	c_3 d_2	7 33.88	54 0 "	"	V A	48.800	10 8 3.61	15 16 25.86	15 3007
221	8.0	24.1	26.5	28.4	30.3	32.1	e	7 58.77	54 0 "	"	VII	44.850	10 8 28.51	−15 11 59.23	−14 3059

Reduction Elements. Zones 23 and 24.

1894.	OBSERVED.			ADOPTED.		
	c	b	a	c	b	a
	s	s	s	s	s	s
March 7.3....	+0.316	−0.201	+0.189	+0.279	−0.168	+0.307
7.5....	+0.242	−0.135	+0.289			
			+0.442			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	β Leporis		α Leporis		γ Leporis		δ Leporis		η Leporis		20 Navis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	59 40 3.75		56 44 4.10		61 18 3.30		59 42 3.05		53 2 3.00		54 18 3.35	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq..	45.600	5 44.06	43.550	5 5.29	46.160	5 54.70	47.500	6 20.00	41.995	4 36.34		5 26.64
II Red. to Mer......	.545	1.59	.540	1.63	.100	1.58	.425	1.59	42.005	1.67		1.66
VI Inclination	.390		.340		45.980		.265		41.875		44.570	2.04
VII Refraction......	.350	1 37.6	.300	1 27.1	.880	1 44.4	.255	1 38.0	.770	1 16.1	.540	1 20.4
	Lalande 16304		Bradley 1212		Lalande 18817		22 Sextantis		μ Hydrae			
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″			
CIRCLE READING.	51 6 3.35		46 28 3.35		59 28 3.10		46 22 3.60		55 8 3.40			
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″		
I Microm. Eq......	45.960	5 51.17	42.300	4 41.34	45.980	5 51.90	46.560	6 4.11		5 3.34		
II Red. to Mer......	.930	1.69	.240	1.72	.970	1.59	.490	1.73	43.330	1.70		
VI Inclination	.770		.090		.810			−2.04		−1.63		
VII Refraction.......	.720	1 11.7	.065	1 0.9	.775	1 38.3		1 1.0		1 23.3		

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
β Leporis...........	5 23 28.69	11	+0.49	+13.48	59 47 27.0	[43.3]
Groombridge 966..	5 25 20.60	8	−0.14	[+13.74]	323 58	....
α Leporis...........	5 27 49.87	11	+0.47	+13.44	56 50 38.1	40.0
γ Leporis...........	5 39 49.37	11	+0.51	+13.31	61 25 44.0	39.5
δ Leporis...........	5 46 32.56	11	+0.49	+13.28	59 50 2.6	40.1
η Leporis...........	5 51 21.42	11	+0.44	+13.34	53 7 57.1	40.1
20 Navis.............	8 8 15.15	11	+0.45	+13.23	54 24 54.1	41.0
Lalande 16304.....	8 13 9.54	11	+0.42	+13.35	51 13 7.9	39.8
Groombridge 1446.	8 27 47.49	8	−0.13	[+13.37]	324 56	....
Bradley 1212......	8 30 5.38	11	+0.39	+13.35	46 33 47.3	40.7
Lalande 17333.....	8 41 43.08	11	+0.47	+13.35	57 16	....
Lalande 18817.....	9 28 7.13	11	+0.49	+13.41	59 35 34.9	40.6
22 Sextantis	10 12 9.52	11	+0.39	+13.37	46 29 8.4	39.5
30 H. Camelopardalis.	10 18 12.09	6	−0.46	[+12.50]	315 50	....
μ Hydrae...........	10 20 45.49	11	+0.45	+13.35	55 14 30.1	40.1

h 5.000............*dt* .... s +13.366
Hourly rate .... − 0.0040

Adopted Equator Point..........° ′ ″ 38 56 40.18

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 29	29.795	57.0	56.4
6 17	29.785	54.2	53.8
6 42	29.785	53.0	52.2
7 32	29.765	51.2	51.3
8 14	29.765	51.2	50.2
8 42	29.765	51.2	49.5
9 27	29.775	50.3	48.4
10 13	29.765	49.3	48.2

Notes.

136. A little hazy.
22 Sextantis. Faint; clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					$D=$ Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	"	"	"	"	"
53	+0.437	5 30	......	+15.791	+15.643	+15.492	+15.340	....	−2.74	−3.02	−3.30	−3.57
54	0.444	6 0	......	15.629	15.479	15.327	15.174	....	2.89	3.16	3.43	3.69
55	0.452	6 30	+15.652	15.507	15.359	15.211	15.061	−2.85	3.11	3.37	3.62	3.85
56	0.460	7 0	15.567	15.428	15.284	15.141	14.996	3.16	3.41	3.65	3.88	4.12
57	+0.469	7 30	15.529	15.393	15.259	15.122	14.983	3.57	3.79	4.00	4.22	4.44
		8 0	......	15.407	15.281	15.154	15.023	....	4.24	4.42	4.61	4.81
		8 30	......	15.464	15.348	15.233	15.115	....	4.72	4.89	5.04	5.20
		9 0	15.665	15.564	15.464	15.362	15.257	5.16	5.30	5.41	5.55	5.67
		9 30	15.793	15.709	15.622	15.536	15.445	5.78	5.88	5.98	6.06	6.15
		10 0	15.960	15.892	15.823	15.752	15.680	6.45	6.50	6.55	6.61	6.65
		10 30	+16.165	+16.112	+16.062	+16.008	+15.954	−7.14	−7.15	−7.16	−7.17	−7.19

APPARENT RIGHT ASCENSION.	R				
	53°	54°	55°	56°	57°
h m	"	"	"	"	"
5 30	75.61	78.42	81.34	84.43	87.66
6 0	75.86	78.67	81.60	84.70	87.94
6 30	76.10	78.92	81.87	84.98	88.23
7 0	76.26	79.09	82.04	85.15	88.41
7 30	76.33	79.16	82.11	85.23	88.49
8 0	76.44	79.27	82.22	85.35	88.61
8 30	76.54	79.38	82.34	85.47	88.74
9 0	76.67	79.51	82.47	85.61	88.88
9 30	76.77	79.62	82.58	85.72	89.00
10 0	76.79	79.63	82.60	85.74	89.02
10 30	76.82	79.67	82.64	85.78	89.06

1894 MARCH 12. ZONE 25. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ' " "	r	h m s	° ' "	°
1	8.5	12.8	15.0	16.9	18.8	20.9	e	13 47.20	55 10 5.0 28.9	VII A 44.990	6 14 17.53	−16 23 40.97	−16 1432
2	8.8	41.8	44.0	45.9	47.8	49.8	e	14 16.19	55 10 " "	VII B 47.105	6 14 46.53	16 17 56.15	16 1437
3	8.8	24.0	26.0	28.3	30.4	32.5	c	19 28.25	55 34 5.0 0.3	V 42.960	6 19 58.52	16 43 52.80	16 1469
4	8.6	31.7	33.4	35.5	37.6	39.7	a	21 5.15	54 58 5.0 28.7	I 45.150	6 21 35.50	16 8 29.39	16 1481
5	7.9	28.9	31.1	33.3	35.4	37.6	c	21 33.27	55 22 5.0 0.0	V 45.130	6 22 3.56	16 32 34.48	16 1483
6	8.7	24.3	26.1	28.0	30.0	32.2	a	24 57.67	54 48 5.0 29.4	I 48.420	6 25 28.02	15 59 33.51	15 1406
7	8.6	23.0	24.8	26.8	28.9	30.9	a	25 56.46	55 2 5.0 0.3	I 46.130	6 26 26.78	16 12 51.54	16 1506
8	9.1	59.8	1.8	3.8	5.6	7.9	a	26 33.35	55 2 " "	III 41.840	6 27 3.67	16 11 32.00	16 1514
9	8.9	44.0	45.8	47.8	49.7	52.0	a	29 17.44	55 2 " "	I 46.530	6 29 47.75	16 13 0.88	16 1526
10	8.8	15.2	17.5	19.4	21.0	23.2	e	31 49.46	55 58 5.0 29.9	V 46.330	6 32 19.64	−17 9 6.27	−17 1554
11	8.2	57.3	59.5	1.5	3.7	6.0	c	33 1.61	55 58 " "	III 43.470	6 33 31.78	−17 8 10.82	−17 1564
12	8.8	28.3	30.6	32.5	34.4	36.4	e	34 2.77	55 10 5.0 29.3	V 47.210	6 34 33.05	16 21 19.58	16 1559
13	8.2	14.5	16.6	18.7	21.0	23.2	c	35 18.81	55 10 " "	III A 42.880	6 35 49.08	16 23 9.26	16 1563
14	8.1	0.3	2.4	4.5	9.0	10.5	c_3 d_2	36 0.30	56 30 5.0 0.7	V 46.180	6 36 30.39	17 41 5.54	17 1582
15	9.0	58.8	0.9	3.2	5.4	7.5	c	37 3.17	56 30 " "	III 44.540	6 37 33.26	17 40 33.21	17 1588
16	9.0	30.8	32.9	35.0	37.4	39.5	c	37 35.13	56 30 " "	III 47.770	6 38 5.21	17 41 34.99	17 1592
17	8.9	44.8	46.6	48.4	50.4	52.7	a	44 18.10	54 40 5.0 29.0	I B 46.890	6 44 48.44	15 48 1.46	15 1523
18	8.3	50.4	52.1	54.0	56.0	58.3	a	45 23.70	54 40 " "	I A 48.110	6 45 54.02	15 54 50.68	15 1533
19	9.2	23.6	25.7	27.9	30.0	32.2	c	45 27.89	54 40 " "	V 44.460	6 45 58.22	15 50 31.49	15 1534
20	9.0	29.3	31.7	33.5	35.4	37.5	e	46 3.77	55 24 5.0 29.9	VII 46.050	6 46 34.00	−16 35 5.98	−16 1629
21	8.5	32.7	34.8	36.7	38.7	40.8	a	51 6.19	54 8 5.0 28.5	I 44.020	6 51 36.58	−15 18 20.82	−15 1567
22	8.8	13.0	14.8	16.7	18.7	20.9	a	51 46.26	54 8 " "	I B 44.080	6 52 16.65	15 15 10.04	15 1570
23	7.9	29.4	31.5	33.7	35.9	38.0	c	52 33.71	55 34 5.0 0.3	III 47.060	6 53 3.90	16 45 26.10	16 1677
24	8.0	43.7	46.0	47.8	49.8	51.7	e	53 17.92	56 26	....	6 53 47.98	17 38 40	17 1705
25	8.5	43.4	45.8	47.7	49.6	51.5	e	54 17.73	56 26	....	6 54 47.80	17 32 3	17 1714
26	8.9	13.5	15.6	17.5	19.5	21.5	e	56 47.75	55(50)	....	6 57 17.90	16 55 50	16 1714
27	8.0	30.2	32.6	34.5	36.4	38.4	e	58 4.82	54 40 5.0 28.6	VII 47.440	6 58 35.13	15 51 35.76	15 1617
28	8.1	44.8	46.6	48.9	51.1	53.3	c	59 48.95	54 58 5.0 28.7	III 42.200	7 0 19.22	16 7 54.69	16 1743
29	8.8	21.6	23.7	25.8	28.0	30.2	c	0 25.87	54 58 " "	III A 43.750	7 0 56.13	16 11 37.60	16 1751
30	9.2	50.9	53.0	55.0	57.1	59.4	c	0 55.09	54 58 " "	V A 49.890	7 1 25.34	−16 13 36.23	−16 1756

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
31	8.8	39.3	41.9	43.7	45.6	47.7	e	1 14.01	54 58 5.0 28.7	VII B 38.250	7 1 44.28	−16 3 30.81	-16 176
32	9.1	26.2	28.2	30.5	32.6	34.8	c	3 30.47	54 48 5.0 29.7	III 38.790	7 4 0.75	15 56 51.63	15 166
33	8.7	5.7	7.9	10.0	12.0	14.2	c	4 9.97	54 48 “ “	III 47.740	7 4 40.25	15 59 42.33	15 166
34	8.8	51.6	53.7	55.9	58.0	0.2	c	4 55.89	54 48 “ “	III 50.060	7 5 26.16	16 0 26.86	15 167
35	8.5	27.4	29.4	31.6	33.8	36.0	c	5 31.65	54 48 “ “	III 43.600	7 6 1.93	15 58 24.20	15 168
36	8.9	29.3	31.1	33.1	35.1	37.3	a	7 2.96	56 20 5.0 29.6	III 44.160	7 7 33.03	17 30 39.97	17 183
37	8.4	0.9	2.8	4.6	6.7	8.9	a	8 34.57	56 20 “ “	I A 49.940	7 9 4.62	17 35 42.15	17 185
38	9.0	9.7	12.0	14.2	16.3	18.6	c	9 14.17	56 36 5.0 0.1	V 46.380	7 9 44.20	17 47 26.01	17 186
39	8.9	28.4	30.3	32.3	34.2	36.5	a	11 2.16	56 32 5.0 29.9	I 46.830	7 11 32.19	17 43 31.67	17 187
40	8.2	50.8	52.6	54.6	56.5	58.8	a	12 24.46	56 24 5.0 0.6	I 47.640	7 12 54.52	−17 35 47.71	−17 189
41	9.0	10.4	12.2	14.0	16.1	18.4	a	13 43.78	54 54 5.0 29.7	I 47.590	7 14 14.04	−16 5 42.60	−16 188
42	7.5	52.9	54.7	56.7	58.7	0.9	a	14 26.36	55 2 5.0 29.2	III 43.385	7 14 56.60	16 12 24.85	16 189
43	8.9	26.1	28.0	30.0	32.0	34.1	a	18 59.59	54 48 5.0 29.0	I 45.710	7 19 29.86	15 59 8.74	15 180
44	5.8	5.2	7.2	9.0	11.1	13.3	a	19 38.71	54 48 “ “	I 49.270	7 20 8.98	16 0 16.82	15 181
45	8.0	27.9	29.8	31.7	33.6	35.8	a	21 1.23	54 16 5.0 28.8	I 47.900	7 21 31.56	15 27 48.85	15 182
46	8.1	2.6	4.7	7.0	9.3	11.5	c	21 7.03	56 58 5.0 1.0	V 47.140	7 21 37.01	18 9 47.84	18 183
47	9.4	23.2	25.1	27.4	29.6	31.8	c	22 27.43	54 22 5.0 29.6	V 42.180	7 22 57.76	15 32 5.75	15 183
48	8.8	37.4	39.3	41.2	43.3	45.4	a	24 10.86	54 42 5.0 29.6	I A 46.470	7 24 41.13	15 56 38.92	15 185
49	8.9	18.9	21.0	23.1	25.3	27.4	c	24 23.15	54 42 “ “	III B 49.330	7 24 53.43	15 51 9.75	−15 185
50	9.1	33.8	35.6	37.1	39.3	41.6	a	26 6.96	53 34 4.0 27.8	I 47.900	7 26 37.40	−14 45 49.41	....
51	9.6	3.7	5.8	8.0	10.0	12.3	c	27 7.97	54 32 5.0 29.3	V 47.290	7 27 38.28	−15 43 45.57	−15 188
52	9.1	0.7	2.5	4.3	6.3	8.5	a	28 33.94	54 20 5.0 28.8	III 44.100	7 29 4.27	15 30 43.10	15 189
53	9.0	53.5	56.0	57.9	59.6	1.7	e	31 28.36	53 4 5.0 28.7	VII B 47.110	7 31 58.86	14 12 29.00	14 201
54	8.0	......	......	......	......	......	......	......	53 4 “ “	III (47).160	7 32 0	14 15 39.33	14 202
55	8.0	......	......	......	......	......	......	......	53 4 “ “	V 47.390	7 32 0	14 15 45.35	14 202
56	8.7	56.5	58.3	0.4	2.3	4.7	a	31 29.74	53 4 “ “	I 43.050	7 32 0.23	14 14 19.31	14 202
57	9.0	53.6	55.4	57.3	59.3	1.5	a	35 26.75	53 14 5.0 28.1	III 44.180	7 35 57.22	14 24 44.59	14 208
58	9.2	58.4	0.4	2.4	4.6	6.8	c	36 2.53	53 26 5.0 28.5	V 46.400	7 36 32.97	14 37 29.46	14 210
59	8.9	42.4	44.6	46.4	48.3	50.5	e	36 17.01	53 26 “ “	VII B 49.250	7 36 47.46	14 35 12.84	14 211
60	8.4	48.7	50.5	52.8	54.9	56.9	c	38 52.77	54 44 5.0 29.1	V 48.810	7 39 23.05	−15 56 20.44	−15 200
61	9.4	33.4	35.8	37.6	39.5	41.7	e	39 7.98	54 44 “ “	VII A 49.080	7 39 38.25	−15 59 40.01	−15 200
62	9.0	30.9	33.0	35.0	37.2	39.5	c	43 35.13	54 50 5.0 29.0	V 44.640	7 44 5.41	16 1 3.47	15 206
63	8.0	3.9	5.8	8.0	10.2	12.5	c	44 8.09	54 50 “ “	V A 48.050	7 44 38.36	16 5 21.61	15 206
64	9.1	24.0	26.0	28.2	30.5	32.7	c	45 28.29	54 38 5.0 29.9	V (B) 49.990	7 45 58.60	15 47 33.69	15 208
65	8.5	16.7	18.7	20.8	23.0	25.2	c	46 20.89	54 38 “ “	V A 47.860	7 46 51.19	15 53 18.90	15 209
66	8.0	28.5	30.4	32.6	34.9	37.0	c	47 32.69	53 58 5.0 28.0	V 48.230	7 48 3.08	15 10 10.76	15 210
67	8.9	54.7	56.6	58.5	0.5	2.7	a	49 28.36	56 12 5.0 29.9	I 43.890	7 49 58.47	17 22 52.85	17 222
68	8.5	47.9	49.7	51.6	53.5	55.8	a	50 21.20	54 28 5.0 29.2	III 47.110	7 50 51.52	15 39 51.03	15 212
69	8.4	55.6	57.5	59.9	2.0	4.1	c	50 59.83	54 28 “ “	III B 49.900	7 51 30.16	15 37 32.11	15 213
70	8.3	45.6	47.3	49.5	51.4	53.4	a	53 18.81	53 32 5.0 28.9	I 49.485	7 53 49.25	−14 44 33.08	−14 230
71	8.0	41.5	43.4	45.4	47.3	49.5	a	54 15.03	55 14 5.0 28.6	I 43.160	7 54 45.28	−16 24 37.61	−16 222
72	9.5	49.4	51.3	53.1	55.1	57.3	a	56 22.85	55 14 “ “	I A 44.160	7 56 53.09	16 28 10.82	16 224
73	8.6	12.0	13.9	16.0	17.9	20.0	a	57 45.57	55 14 “ “	I 47.060	7 58 15.82	16 25 53.42	16 225
74	8.2	43.2	45.1	46.9	49.0	51.3	a	58 16.71	55 14 “ “	III 41.510	7 58 46.96	16 24 9.83	16 226
75	9.3	54.7	56.6	58.6	0.5	2.6	a	59 28.09	54 24 5.0 29.8	III 44.340	7 59 58.44	15 35 2.46	15 223
76	8.5	52.5	54.8	56.9	59.3	1.5	c	59 57.01	54 24 “ “	III A 43.770	8 0 27.36	15 38 4.93	15 224
77	8.5	4.5	6.2	8.2	10.2	12.5	a	1 37.82	54 24 “ “	I A 46.550	8 2 8.16	15 38 56.90	15 225
78	8.0	45.1	47.1	49.1	51.3	53.6	c	1 49.25	54 24 “ “	III B 42.580	8 2 19.61	15 31 17.71	15 226
79	9.9	58.5	0.6	2.7	4.8	7.2	c	3 2.77	54 46 5.0 29.0	V 46.100	8 3 33.08	15 57 39.80	15 226
80	5.8	23.8	25.8	28.2	32.4	33.9	c_3 d_2	4 23.82	54 46 “ “	III 45.080	8 4 54.13	−15 57 19.33	−15 228
81	9.0	57.3	59.2	1.1	3.0	5.1	a	6 30.67	54 38 5.0 29,1	I 45.370	8 7 1.00	−15 49 23.65	−15 2304
82	9.3	38.1	39.8	41.8	43.7	45.9	a	7 11.18	53 12 5.0 28.2	III 43.390	8 7 41.68	14 22 43.77	14 241
83	8.3	50.8	52.9	55.1	57.4	59.4	c	7 55 13	53 12 “ “	V A 50.290	8 8 25.63	14 28 10.00	14 242
84	8.9	57.9	0.1	4.5	6.0	8.9	c_4 d_3	9 55 87	56 12 5.0 0.7	VI 45.530	8 10 26.03	17 23 37.72	17 2407
85	9.0	8.6	10.7	12.9	15.1	17.4	c	11 12.95	56 12 “ “	III 42.915	8 11 43.12	17 22 46.13	17 241
86	8.9	6.7	8.5	10.3	12.3	14.6	a	12 39.95	54 20 5.0 29.2	I B 47.820	8 13 10.34	15 28 59.88	15 2365
87	8.9	57.5	59.6	1.7	3.9	6.0	c	13 1.75	54 20 “ “	III A 47.590	8 13 32.13	15 35 22.81	15 236
88	9.2	51.8	54.0	55.9	58.1	0.5	c	13 56.07	56 34 5.0 29.7	VI (B) 41.020	8 14 26.21	17 41 1.77	17 2437
89	9.0	45.1	47.2	49.4	51.7	53.8	c	14 49.45	56 34 “ “	V A 43.240	8 15 19.58	17 48 9.09	17 244
90	9.1	36.7	38.7	40.8	43.0	45.1	c	15 40.87	56 34 “ “	III B 40.460	8 16 11.01	−17 40 49.58	−17 2455
91	8.3	31.3	33.2	35.2	37.0	39.3	a	17 5.01	56 34 “ “	I B 37.260	8 17 35.16	−17 39 47.48	−17 2466
92	9.5	12.8	15.0	17.1	19.3	21.7	c	18 17.19	56 34 “ “	III 43.250	8 18 47.33	17 44 56.10	17 2472
93	9.4	44.0	46.6	48.5	50.4	52.5	e	18 18.50	56 34 “ “	VII 43.200	8 18 48.64	17 44 58.22	17 2472
94	8.1	44.8	46.6	48.4	50.5	52.6	a	23 17.94	53 28 5.0 28.0	I 44.520	8 23 48.45	14 39 10.80	14 2536
95	8.5	21.7	23.5	25.5	27.4	29.5	a	23 54.95	54 0 5.0 28.0	III 45.960	8 24 25.40	15 11 41.72	15 2455
96	8.8	9.7	11.6	13.6	15.5	17.7	a	24 43.29	55 36 5.0 29.0	III 46.850	8 25 13.57	16 48 4.03	16 2477
97	8.7	57.4	59.8	1.7	3.5	5.5	e	30 32.02	54 24 5.0 28.6	VII A 45.400	8 31 2.44	15 38 51.07	15 251
98	9.5	20.0	22.4	24.1	26.0	27.9	e	30 54.53	54 24 “ “	VII B 40.570	8 31 24.96	15 30 53.99	15 2512
99	8.4	45.9	48.0	49.8	51.6	53.8	a	33 19.46	55 28 5.0 29.8	III 43.860	8 33 49.78	16 39 10.59	16 2534
100	9.5	41.2	43.0	44.9	46.9	49.1	a	38 14.81	56 26 5.0 29.6	I B 41.980	8 38 45.06	−17 33 25.47	− 17 2623
101	8.2	46.2	47.9	49.8	51.8	54.0	a	39 19.74	56 26 “ “	I 49.095	8 39 49.98	−17 38 53.60	−17 2632
102	8.1	20.6	22.6	24.8	27.0	29.0	c	43 24.81	56 32 5.0 0.8	III B 44.730	8 43 55.06	17 40 22.52	17 2655
103	8.6	1.7	3.7	5.9	8.0	10.2	c	44 5.91	56 32 “ “	III B 34.940	8 44 36.17	17 37 16.41	17 266
104	8.7	34.2	36.5	38.5	40.8	43.0	c	44 38.61	56 32 “ “	V A 42.760	8 45 8.86	−17 46 12.47	−17 2663

1894 MARCH 12. ZONE 26. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
105	8.7	47.0	49.0	51.4	53.5	57.8	c_2 d_1	12 49.18	55 22 5.0 29.8	VI 47.930	9 13 19.70	−16 34 44.81	−16 2740
106	8.4	10.0	12.3	14.0	16.0	18.0	e	13 44.38	55 12	... .	9 14 14.92	16 23 41	16 2748
107	8.6	22.3	24.4	26.7	28.9	30.9	c	15 26.65	54 38 5.0 29.4	V 42.550	9 15 57.24	15 49 0.18	15 2766
108	8.2	51.0	53.0	55.3	57.4	59.6	c	15 55.29	54 38 " "	V 42.230	9 16 25.89	15 48 54.26	15 2769
109	8.5	11.7	13.6	15.5	17.5	19.7	a	17 45.31	55 52 5.0 29.8	I 45.960	9 18 15.81	17 4 6.28	16 2767
110	8.8	25.8	27.7	29.5	31.5	33.7	a	18 59.35	55 52 " "	I 44.130	9 19 29.87	17 3 31.22	16 2775
111	8.9	35.4	37.2	39.1	41.0	43.2	a	20 8.65	54 18 5.0 29.7	I 43.690	9 20 39.30	15 29 19.21	15 2790
112	7.9	12.7	14.4	16.4	18.3	20.6	a	20 46.25	56 18 5.0 0.4	III 48.290	9 21 16.74	17 30 55.12	17 2855
113	9 2	47.6	49.5	51.4	53.3	55.5	a	22 20.93	54 16 5.0 0.0	I 43.920	9 22 51.60	15 27 24.36	15 2804
114	8.8	49.1	51.0	52.9	54.8	57.0	a	23 22.50	54 38 5.0 28.6	I A 51.410	9 23 53.14	−15 55 0.83	−15 2810
115	8.0	34.0	36.0	38.2	40.1	42.5	c	23 38.17	54 38 " "	V B 40.150	9 24 8.82	−15 45 3.49	−15 2811
116	7.8	40.2	42.6	44.3	46.2	48.4	e	24 14.55	55 56 5.0 0.1	VII B 42.990	9 24 45.10	17 4 4.64	16 2804
117	8.4	24.5	26.7	28.5	30.4	32.6	e	24 58.74	55 56 " "	VII A 41.660	9 25 29.28	17 10 4.93	16 2806
118	9.0	54.6	56.6	58.5	0.4	2.6	e	25 28.77	55 56 " "	VII B 43.260	9 25 59.32	17 4 10.17	16 2809
119	8.5	24.0	25.7	27.7	29.7	32.0	a	30 57.49	55 42 5.0 29.0	I B 37.130	9 31 28.10	16 48 9.28	16 2836
120	8.4	7.9	10.0	12.1	14.4	16.5	c	31 12.19	55 42 " "	V A 42.250	9 31 42.79	16 56 15.51	16 2838
121	8.2	24.0	25.9	27.9	29.8	32.0	a	32 57.60	55 42 " "	III 39.410	9 33 28.22	16 52 7.36	16 2846
122	8.0	41.4	43.1	45.1	46.9	49.1	a	34 14.60	54 18 5.0 28.6	III 47.370	9 34 45.34	15 30 34.91	15 2860
123	9.0	24.8	26.5	28.4	30.5	32.5	a	34 58.01	54 18 " "	I B 46.050	9 35 28.76	15 26 55.95	15 2864
124	8.0	25.0	26.8	28.7	30.6	32.9	a	35 58.49	55 46 5.0 29.8	I B 48.420	9 36 29.13	−16 55 46.27	−16 2857
125	8.9	57.0	58.9	0.9	2.8	5.0	a	37 30.62	55 46 " "	I (A) 46.680	9 38 1.26	−17 1 39.11	−16 2867
126	8.0	50.1	52.0	53.8	56.0	58.1	a	38 23.70	55 46 " "	I 46.830	9 38 54.35	16 58 28.98	16 2871
127	.....	58.9	1.2	3.1	4.9	7.0	e	39 33.34	55 12 5.0 29.5	VII 42.595	9 40 4.04	16 23 11.71	16 2878
128	8.2	0.9	3.2	5.0	7.0	9.0	e	40 35.04	57 2 5.0 0.4	VII 45.840	9 41 5.61	18 14 19.99	18 2772
129	8.6	18.8	20.7	22.6	24.7	26.8	a	42 52.57	56 42 5.0 29.7	I 47.070	9 43 23.18	17 54 37.74	17 2968
130	8.4	20.2	22.0	24.0	26.0	28.2	a	43 53.94	56 42 " "	I A 49.040	9 44 24.55	17 58 28.75	17 2973
131	8.6	41.6	43.5	45.5	47.3	49.6	a	44 15.34	56 42 " "	III B 46.250	9 44 45.96	17 51 11.99	17 2975
132	9.0	23.5	25.3	27.3	29.4	31.4	a	45 56.97	55 4 5.0 29.2	I 46.880	9 46 27.72	16 16 29.64	16 2901
133	8.8	6.7	8.9	11.0	13.4	15.5	c	46 11.09	55 54 5.0 0.7	V 46.890	9 46 41.78	17 6 36.63	16 2902
134	8.5	22.1	23.9	25.9	27.9	30.0	a	51 55.55	55 4 5.0 0.1	I 46.790	9 52 26.35	−16 16 29.95	−16 2926
135	8.7	22.5	24.5	26.6	28.8	30.9	c	52 26.67	53 50 5.0 28.9	III 47.170	9 52 57.55	−15 2 34.94	−14 2987
136	8.9	48.5	50.4	52.2	54.2	56.5	a	54 21.87	54 34 5.0 29.1	I 45.190	9 54 52.72	15 45 58.13	15 2951
137	8.1	26.7	28.7	30.7	32.9	35.2	c	54 30.85	54 34 " "	III A 42.600	9 55 1.70	15 48 23.80	15 2952
138	8.5	0.4	2.7	4.8	7.0	9.4	c	55 4.87	54 34 " "	III A 43.990	9 55 35.72	15 48 50.39	15 2955
139	8.9	5.8	7.9	10.1	12.3	14.5	c	56 10.13	55 42 5.0 29.0	V 42.070	9 56 40.92	16 53 6.03	16 2942
140	8.0	45.9	48.3	50.1	51.9	54.0	e	56 20.29	55 42 " "	VII B 45.750	9 56 51.08	16 51 5.07	16 2943
141	9.0	46.5	48.5	50.5	52.7	55.0	c	57 50.65	55 28 5.0 29.3	V 43.730	9 58 21.46	16 39 37.47	16 2947
142	8.3	28.0	30.3	32.3	34.1	36.0	e	58 2.41	55 28 " "	VII A 40.670	9 58 33.22	16 41 53.58	16 2949
143	8.8	48.2	50.0	51.9	53.8	55.8	a	2 21.29	53 26 5.0 28.9	I 44.120	10 2 52.27	14 37 36.39	14 3032
144	7.9	41.7	43.6	45.5	47.2	49.6	a	3 14.93	53 56 5.0 29.6	I 43.240	10 3 45.88	−15 7 21.61	−14 3036
145	8.7	39.4	41.3	43.2	45.1	47.4	a	6 12.62	53 22 5.0 28.8	I 44.340	10 6 43.62	−14 33 41.25	−14 3049
146	8.9	56.9	58.6	0.6	2.6	4.7	a	7 30.01	53 14 5.0 28.3	I 46.820	10 8 1.03	14 26 28.13	14 3056
147	8.5	55.5	57.3	59.3	1.3	3.4	a	15 28.76	53 48 5.0 29.2	III 42.320	10 15 59.81	14 59 8.06	14 3093
148	......	43.4	45.3	47.7	49.8	51.9	c	21 47.63	56 32 5.0 29.5	V 47.090	10 22 18.59	17 44 50.78	17 3150
149	......	30.5	32.9	34.7	36.6	38.6	e	22 4.76	56 32 " "	VII 52.590	10 22 35.72	−17 46 36.97	−17 3153

Reduction Elements. Zones 25 and 26.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 12.3....	+0.282	−0.112	+0.242	+0.270	−0.100	+0.235
12.5....	+0.258	−0.088	+0.230			
			+0.232			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	η Leporis		5 Monocerotis		6 Monocerotis		β Canis Majoris		ξ² Canis Majoris		α Canis Majoris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	53 2 1.55		45 4 2.05		49 32 2.30		56 44 2.65		61 42 2.05		55 24 2.35	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	42.070	4 37.10	47.050	6 11.90	42.220	4 40.25	44.505	5 23.71	45.700	5 45.90	44.930	5 31.30
II Red. to Mer.	41.990	1.67	.030	1.74	.185	1.70	.505	1.63	.640	1.57	.850	1.64
VI Inclination	.890		46.860		.030		.280		.450		.720	
VII Refraction	.850	1 16.5	.800	57.9	.030	1.76	.315	1 27.8	.480	1 47.0	.700	1 23.6

	Piazzi VII. 85		Piazzi VIII. 95		6 Hydrae		Lalande 17333		Piazzi VIII. 227		22 Sextantis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	47 36 1.55		58 2 2.00		50 56 2.60		57 12 2.80		54 34 1.25		46 22 1.80	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	47.520	6 20.66	47.490	6 19.98	44.940	5 32.10	44.475	5 22.17	43.470	5 3.42	46.690	6 5.00
II Red. to Mer.	.490	1.71	.410	1.62	.910	1.69	.410	1.63	.430	1.65	.650	1.73
VI Inclination	.300		.310		.790		.210		.235		.500	
VII Refraction	.270	1 3.3	.230	1 32.8	.730	1 11.4	.185	1 29.8	.200	1 21.5	.450	1 1.3

	Bradley 1462		φ Hydrae		ν Hydrae	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	45 56 2.00		55 10 0.80		54 28 2.05	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.320	5 19.46	43.090	4 55.25	45.505	5 42.49
II Red. to Mer.	.200	1.73	.020	1.65	.470	1.65
VI Inclination	.110		42.770		.290	
VII Refraction	.080	1 0.4	.740	1 23.9	.290	1 21.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
η Leporis	5 51 20.22	11	+0.41	+14.47	53 7 56.8	39.5
δ Ursae Minoris S. P.	6 6 8.97	7	−0.35	[+14.54]	305 34	....
5 Monocerotis	6 9 26.97	11	+0.37	+14.41	45 11 13.6	39.3
6 Monocerotis	6 12 21.95	11	+0.39	+14.42	49 37 51.8	38.9
β Canis Majoris	6 17 47.66	11	+0.43	+14.43	56 50 55.8	38.9
ξ² Canis Majoris	6 30 22.64	11	+0.47	+14.40	61 49 36.5	39.1
α Canis Majoris	6 40 14.50	11	+0.42	+14.55	55 30 58.9	39.9
Piazzi VII. 85	7 16 43.18	11	+0.38	+14.44	47 43 27.2	39.9
Piazzi VIII. 95	8 26 31.35	11	+0.44	+14.51	58 9 56.4	40.0
Groombridge 1446	8 27 45.70	11	+0.19	[+14.62]	324 56	....
6 Hydrae	8 34 46.43	11	+0.40	+14.53	51 2 47.8	39.9
Lalande 17333	8 41 41.81	11	+0.44	+14.60	57 18 56.4	39.1
Piazzi VIII. 227	8 53 31.69	11	+0.42	+14.64	54 40 27.8	39.2
22 Sextantis	10 12 8.25	11	+0.37	+14.65	46 29 9.8	40.4
Bradley 1462	10 25 26.89	11	+0.37	+14.65	46 2 23.6	38.5
9 H. Draconis	10 25 58.28	6	+0.20	[+14.36]	322 40	....
φ Hydrae	10 33 11.53	11	+0.42	+14.56	55 16 21.6	38.8
ν Hydrae	10 44 10.15	11	+0.42	+14.60	54 35 8.0	39.3
Bradley 1508	10 51 23.04	11	+0.22	[+14.62]	320 36	....

h 6.000............*dt*.................... s +14.434

Hourly rate .... + 0.0427

Adopted Equator Point.......... 38° 56′ 39.″38

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 47	29.715	52.0	51.4
6 40	29.705	49.9	50.2
7 40	29.705	48.8	49.6
8 48	29.705	47.5	48.2
9 30	29.695	45.8	45.0
9 50	29.695	45.9	44.5
10 10	29.685	45.0	44.3
10 55	29.685	44.9	43.9

Notes.

46. Faint companion, n. f.

148,149. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					$D =$ Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	+0.409	6 0	......	+15.727	+15.578	+15.428	+15.276	....	−3.18	−3.45	−3.72	−3.99
54	0.415	6 30	......	15.601	15.455	15.307	15.157	....	3.47	3.73	4.00	4.27
55	0.421	7 0	......	15.517	15.374	15.231	15.087	....	3.86	4.11	4.36	4.60
56	0.428	7 30	+15.607	15.475	14.340	15.202	15.065	−4.07	4.30	4.54	4.77	4.99
57	+0.434	8 0	15.599	15.478	15.351	15.225	15.094	4.60	4.82	5.03	5.24	5.44
		8 30	......	15.523	15.408	15.293	15.175	....	5.37	5.55	5.74	5.92
		9 0	......	15.611	15.511	15.407	15.305	....	5.97	6.13	6.28	6.42
		9 30	15.824	15.740	15.655	15.568	15.479	6.49	6.60	6.72	6.84	6.95
		10 0	15.976	15.908	15.841	15.769	15.698	7.17	7.26	7.33	7.41	7.48
		10 30	+16.164	+16.112	+16.061	+16.009	+15.955	−7.88	−7.92	−7.96	−8.00	−8.04

APPARENT RIGHT ASCENSION.	*R*				
	53°	54°	55°	56°	57°
h m	″	″	″	″	″
6 0	76.21	79.03	81.98	85.09	88.35
6 30	76.30	79.12	82.07	85.19	88.45
7 0	76.37	79.20	82.15	85.27	88.53
7 30	76.42	79.25	82.21	85.33	88.59
8 0	76.51	79.34	82.30	85.43	88.70
8 30	76.60	79.43	82.39	85.53	88.80
9 0	76.77	79.62	82.58	85.72	89.00
9 30	77.11	79.96	82.95	86.10	89.39
10 0	77.20	80.06	83.04	86.20	89.50
10 30	77.23	80.09	83.08	86.24	89.54

1894 MARCH 14. ZONE 27. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″ ″	r	h m s	° ′ ″	°
1	9.0	43.9	45.7	47.7	49.6	51.8	a	33 17.23	54 26	5.0 29.6	I 47.000	6 33 49.14	−15 37 10.73	−15 1461
2	8.4	45.8	47.6	49.5	51.6	53.8	a	34 19.29	55 24	5.0 29.8	I 42.280	6 34 51.08	16 33 44.27	16 1560
3	9.2	51.0	53.3	55.1	57.1	59.0	e	34 25.25	56 20	5.0 1.0	VII B 41.610	6 34 56.91	17 26 27.34	17 1573
4	8.0	2.9	4.6	6.5	8.6	10.6	a	36 36.41	56 20	“ “	I B 41.330	6 37 8.06	17 26 18.45	17 1584
5	9.0	35.8	37.8	39.7	41.7	43.9	a	38 9.57	56 20	“ “	I A 45.340	6 38 41.20	17 34 1.05	17 1595
6	9.2	26.6	28.6	30.8	33.0	35.1	c	38 30.83	55 50	5.0 29.7	III (A) 43.650	6 39 2.53	17 3 28.63	17 1598
7	9.4	12.0	14.1	15.8	17.5	19.8	e	38 46.07	55 50	“ “	V B 41.560	6 39 17.79	16 56 25.11	16 1583
8	8.9	27.0	29.2	31.3	33.2	35.0	e	40 1.37	55 50	“ “	V B 39.410	6 40 33.09	16 55 44.81	16 1590
9	7.6	8.1	10.5	12.4	14.1	16.1	e	40 42.45	55 50	“ “	VII A 46.200	6 41 14.14	17 4 21.11	17 1611
10	9.1	26.8	29.1	30.9	32.7	34.6	e	42 1.19	54 58	5.0 29.9	VII (B) 43.230	6 42 33.02	−16 4 57.51	−16 1600
11	7.8	43.3	45.3	47.6	49.7	51.9	c	43 47.57	54 58	“ “	III B 46.150	6 44 19.39	−16 5 51.04	−16 1609
12	7.9	10.4	12.1	14.2	16.0	18.2	a	44 43.75	54 58	“ “	III A 44.380	6 45 15.56	16 11 43.25	16 1618
13	7.0	18.6	20.7	22.9	25.1	27.2	c	45 22.91	55 46	5.0 29.8	V 49.190	6 45 54.61	16 58 5.93	16 1624
14	8.2	27.0	29.3	31.2	33.0	35.0	e	46 1.20	56 34	5.0 1.2	V 43.560	6 46 32.79	17 44 22.21	17 1650
15	8.0	34.9	37.2	39.1	41.0	42.9	e	50 9.46	54 24	5.0 29.7	V 44.300	6 50 41.35	15 34 31.31	15 1560
16	8.7	19.7	22.1	24.0	25.8	27.8	e	50 54.32	54 24	“ “	V A 42.640	6 51 26.20	15 37 13.05	15 1564
17	8.2	3.0	5.3	7.5	9.6	11.7	c	52 7.43	54 24	....	....	6 52 39.31	15 36 37	15 1573
18	8.2	45.6	47.7	49.9	52.1	54.4	c	53 49.95	56 14	5.0 29.6	V A 50.260	6 54 21.56	17 29 44.84	17 1709
19	8.7	46.9	49.0	53.3	55.1	57.7	c_4 d_3	54 44.84	54 52	5.0 29.7	VI 47.880	6 55 16.65	16 3 43.80	16 1694
20	8.5	49.1	50.9	55.1	56.8	59.6	c_4 d_3	55 46.65	56 58	5.0 1.8	VI 47.280	6 56 18.17	−18 9 40.21	−18 1633
21	9.2	45.1	47.5	49.3	51.2	53.3	e	56 19.31	56 58	“ “	V 46.330	6 56 50.82	−18 9 21.68	−18 1637
22	8.7	29.6	31.8	33.7	35.7	37.6	e	57 3.71	56 58	“ “	V A 43.270	6 57 35.22	18 11 36.78	18 1644
23	8.0	59.1	1.2	3.4	5.6	7.7	c	58 3.41	56 58	“ “	V A 42.550	6 58 34.92	18 11 23.57	18 1650
24	8.8	59.4	1.0	3.0	5.0	7.2	a	59 33.00	56 58	“ “	III B 41.550	7 0 4.52	18 4 38.31	18 1664
25	8.7	10.4	12.7	14.6	17.0	19.1	c	0 14.77	55 14	5.0 0.1	V B 46.550	7 0 46.53	16 22 9.33	16 1749
26	9.0	43.4	45.8	47.8	49.6	51.5	e	0 17.93	55 14	“ “	VII (A) 47.710	7 0 49.67	16 28 58.12	16 1750
27	9.3	25.6	27.4	29.3	31.3	33.5	a	2 59.03	55 14	“ “	I 45.250	7 3 30.79	16 24 54.88	16 1784
28	9.1	43.0	44.8	46.7	48.8	50.9	a	3 16.44	55 14	“ “	III B 47.600	7 3 48.20	16 22 29.25	16 1788
29	9.0	50.4	52.5	54.7	56.9	59.0	c	3 54.71	55 14	“ “	III B 44.840	7 4 26.47	16 21 37.05	16 1793
30	6.0	27.1	29.1	31.3	33.6	35.7	c	4 31.37	54 54	5.0 29.7	V 43.360	7 5 3.17	−16 4 21.97	−16 1802
31	6.8	46.4	48.1	50.2	52.5	54.6	c	4 50.37	54 54	“ “	V 43.410	7 5 22.17	−16 4 23.09	−15 1676
32	9.0	30.5	32.4	34.2	36.2	38.5	a	8 3.98	55 18	5.0 29.7	I 44.930	7 8 35.72	16 28 51.31	16 1832
33	9.4	36.8	38.6	40.5	42.7	44.7	a	9 10.28	55 18	“ “	I A 42.060	7 9 42.01	16 31 10.48	16 1839
34	8.0	9.0	11.0	13.3	15.5	17.6	c	11 13.29	56 0	5.0 0.0	III B 43.170	7 11 44.94	17 7 11.08	17 1884
35	9.3	40.8	42.5	44.6	46.5	48.8	a	11 14.37	56 0	“ “	I A 38.680	7 11 46.01	17 12 9.35	17 1883
36	8.5	14.9	17.1	19.3	21.4	23.6	c	12 19.27	56 0	“ “	III 42.420	7 12 50.91	17 10 9.66	17 1894
37	8.9	42.2	44.0	46.0	48.0	50.2	a	13 15.82	56 0	“ “	III A 43.170	7 13 47.45	17 13 37.53	17 1907
38	8.0	31.6	33.6	35.5	37.9	40.0	c	13 35.73	55 16	5.0 0.1	V 47.530	7 14 7.46	16 27 47.10	16 1886
39	8.5	40.8	42.6	44.5	46.5	48.6	a	15 14.28	55 40	5.0 0.1	I 44.720	7 15 45.96	16 50 52.10	16 1905
40	9.0	22.7	24.8	26.9	29.1	31.2	c	18 26.95	54 20	5.0 0.2	V 46.250	7 18 58.82	−15 31 22.50	−15 1798
41	7.8	20.0	22.4	24.4	26.2	28.2	e	18 54.43	56 2	5.0 1.5	VII 44.950	7 19 26.07	−17 13 4.97	−17 1955
42	8.9	11.8	14.0	16.1	18.4	20.5	c	20 16.17	55 54	5.0 1.2	V B 45.460	7 20 47.83	17 2 0.96	16 1950
43	8.7	45.9	48.0	50.3	52.4	54.6	c	20 50.25	55 54	“ “	V B 39.940	7 21 21.91	17 0 16.17	16 1955
44	8.9	42.0	44.4	46.4	48.2	50.1	e	21 16.42	55 54	“ “	V (A) 46.390	7 21 48.06	17 8 44.54	17 1972
45	......	10.1	12.5	14.4	16.3	18.4	e	21 44.55	55 54	“ “	VII 50.930	7 22 16.20	17 6 59.63	17 1976
46	8.0	46.1	48.0	50.0	52.0	54.1	a	24 19.76	55 54	“ “	I A 44.990	7 24 51.40	17 8 16.11	17 1996
47	9.3	50.8	52.3	54.4	56.4	58.6	a	25 24.23	55 54	“ “	I A 50.180	7 25 55.87	17 9 55.43	17 2005
48	8.7	28.8	30.8	33.0	35.4	37.4	c	25 33.09	55 54	“ “	III 50.370	7 26 4.74	17 6 47.73	17 2006
49	8.4	7.9	9.7	11.7	13.7	15.8	a	27 41.36	55 12	5.0 0.7	I 43.630	7 28 13.10	16 22 36.32	16 2008
50	9.0	8.0	9.7	11.8	13.8	15.9	a	28 41.67	56 36	5.0 1.1	I 48.950	7 29 13.22	−17 48 22.46	−17 2033

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ' " "	r	h m s	° ' "	°
51	9.3	9.8	11.6	13.6	15.5	17.7	a	29 43.10	54 14 5.0 1.1	I 47.530	7 30 14.96	−15 25 49.03	−15 1907
52	8.4	48.0	49.7	51.8	53.6	55.8	a	30 21.24	54 14 “ “	I B 50.070	7 30 53.11	15 23 25.40	15 1915
53	7.0	46.6	48.3	50.5	52.4	54.4	a	31 19.76	53 12 5.0 1.2	III 42.930	7 31 51.76	14 22 21.31	14 2016
54	9.1	19.1	21.1	23.3	25.5	27.7	c	31 23.35	53 12 “ “	V A 46.050	7 31 55.34	14 26 35.33	14 2018
55	9.1	55.1	56.8	58.8	0.7	2.9	a	33 28.23	53 38 5.0 1.0	I B 44.280	7 34 0.19	14 45 35.00	14 2061
56	8.2	38.6	40.7	42.8	44.9	47.1	c	33 42.83	53 38 “ “	III A 42.070	7 34 14.78	14 51 20.19	14 2065
57	7.8	34.1	36.2	38.5	40.5	42.6	c	34 38.39	54 24 5.0 29.1	V 47.460	7 35 10.24	15 35 52.90	15 1966
58	9.5	6.1	8.1	10.4	12.6	14.8	c	35 10.41	54 24 “ “	V A 45.960	7 35 42.26	15 38 37.59	15 1969
59	9.3	55.2	57.3	59.4	1.7	3.7	c	35 59.47	54 24 “ “	V A 44.790	7 36 31.32	15 38 15.70	15 1974
60	9.1	24.6	26.8	28.9	33.0	34.7	c_3 d_2	36 24.61	54 24 “ “	V (A) 44.810	7 36 56.46	−15 38 16.28	−15 1978
61	.....	46.6	49.0	50.9	52.7	54.8	e	37 21.24	54 24	....	7 37 53.10	−15 33 29	−15 1990
62	8.0	57.0	59.0	0.7	2.6	4.9	a	39 30.35	54 34 5.0 29.0	I 41.530	7 40 2.18	15 43 59.29	15 2010
63	9.2	45.2	47.0	49.0	50.9	53.1	a	40 18.55	54 34 “ “	I 42.370	7 40 50.38	15 44 15.66	15 2020
64	9.1	41.5	43.2	45.0	47.1	49.5	a	41 14.78	54 34 “ “	I 48.130	7 41 46.61	15 46 5.73	15 2034
65	7.3	0.1	2.0	4.1	5.8	8.0	a	42 33.51	54 34 “ “	I 43.420	7 43 5.34	15 44 36.70	15 2049
66	7.0	35.9	38.0	40.1	42.3	44.6	c	42 40.19	54 34 “ “	V 47.730	7 43 12.02	15 46 2.23	15 2052
67	9.7	48.8	50.6	52.6	54.5	56.7	a	45 22.08	54 6 5.0 29.5	III 45.110	7 45 53.97	15 17 10.94	15 2080
68	8.5	54.5	56.5	58.7	0.9	3.1	c	45 58.75	54 50 5.0 29.6	III 45.420	7 46 30.55	16 1 19.22	15 2086
69	8.9	17.0	19.1	21.3	23.5	25.7	c	46 21.33	54 50 “ “	V B 49.370	7 46 53.13	15 59 23.81	15 2093
70	8.9	21.1	22.9	24.9	26.9	29.0	a	47 54.33	53 34 5.0 29.5	III 46.830	7 48 26.29	−14 45 43.38	−14 2258
71	8.8	55.7	57.9	0.1	2.3	4.3	c	48 0.07	53 34 “ “	V 44.260	7 48 32.03	−14 44 56.14	−14 2260
72	9.0	33.1	35.0	36.9	39.0	41.1	a	51 6.53	54 38 5.0 29.5	I B 41.010	7 51 38.37	15 44 42.92	15 2140
73	9.0	1.0	2.9	4.9	6.7	9.2	a	51 34.47	54 38 “ “	I A 40.210	7 52 6.30	15 50 53.40	15 2144
74	9.5	0.3	2.3	4.1	6.1	8.4	a	52 33.77	54 38 “ “	III 46.300	7 53 5.60	15 49 38.35	15 2153
75	8.8	13.6	15.8	17.8	20.0	22.1	c	53 17.87	54 18 5.0 29.7	III 44.010	7 53 49.75	15 28 54.26	15 2157
76	8.0	1.9	4.0	6.1	7.9	9.9	e	53 36.44	54 18 “ “	VII B 35.530	7 54 8.33	15 23 3.62	15 2161
77	8.8	6.0	7.8	10.0	11.9	14.0	a	0 39.24	53 2 5.0 0.4	I 44.930	8 1 11.27	14 13 10.18	14 2365
78	9.0	12.9	14.7	16.6	18.6	20.7	a	1 46.22	54 36 5.0 29.5	I 44.900	8 2 18.08	15 47 13.91	15 2260
79	9.1	54.6	56.7	58.9	1.1	3.3	c	1 58.93	55 8 5.0 0.4	V (40).450	8 2 30.72	16 17 54.74	16 2300
80	8.9	52.7	55.0	57.1	59.3	1.4	c	2 57.11	55 32 5.0 0.3	V 45.580	8 3 28.86	−16 43 33.96	−16 2310
81	8.6	14.5	16.9	18.8	20.6	22.6	e	3 49.10	54 30 5.0 0.4	V 44.350	8 4 20.97	−15 41 7.97	−15 2274
82	8.9	32.7	34.7	36.8	39.1	41.2	c	4 36.91	54 30 “ “	V A 43.520	8 5 8.78	15 44 5.49	15 2284
83	8.5	0.5	2.3	4.3	6.2	8.3	a	7 33.65	53 12 5.0 0.5	I 47.025	8 8 5.68	14 23 53.57	14 2419
84	8.4	42.4	44.3	46.4	48.7	50.9	c	7 46.55	54 44 5.0 29.3	V 43.580	8 8 18.40	15 54 55.15	15 2319
85	8.2	41.4	43.2	45.1	47.1	49.3	a	9 14.75	54 44 “ “	III B 47.530	8 9 46.60	15 52 57.03	15 2334
86	9.2	46.6	48.6	50.5	52.5	54.6	a	10 20.09	54 44 “ “	III B 38.580	8 10 51.95	15 50 7.12	15 2344
87	8.8	12.5	14.3	16.2	18.0	20.2	a	11 45.78	54 44 “ “	I 46.250	8 12 17.63	15 55 44.21	15 2357
88	8.0	21.2	23.1	25.1	27.0	29.0	a	12 54.71	55 22 5.0 29.8	I 43.710	8 13 26.49	16 32 58.45	16 2387
89	8.2	34.1	36.0	38.1	40.0	42.1	a	13 7.68	55 22 “ “	III B 42.620	8 13 39.47	16 29 27.32	16 2389
90	8.5	37.4	39.2	41.1	43.1	45.3	a	14 10.85	55 22 “ “	I 43.200	8 14 42.64	−16 32 49.31	−16 2395
91	9.0	30.2	31.9	34.0	35.8	38.1	a	16 3.49	54 26 5.0 29.9	I 42.770	8 16 35.39	−15 36 39.25	−15 2390
92	8.6	27.7	29.7	32.0	34.0	36.2	c	16 31.93	55 14 5.0 29.7	III 48.210	8 17 3.74	16 26 27.04	16 2410
93	8.8	8.3	10.2	12.2	14.1	16.3	a	17 41.83	55 14 “ “	I 45.490	8 18 13.65	16 25 33.93	16 2417
94	8.5	19.0	20.8	22.6	24.6	26.7	a	18 52.21	54 16 5.0 29.7	I 48.390	8 19 24.14	15 28 26.85	15 2417
95	9.0	8.3	10.0	12.2	14.1	16.2	a	19 41.83	55 32 5.0 0.8	III A 44.360	8 20 13.61	16 46 29.63	16 2436
96	8.3	48.1	50.0	52.0	54.0	56.3	a	20 21.73	55 32 “ “	I B 42.560	8 20 53.53	16 39 28.47	16 2440
97	8.2	12.9	14.6	16.6	18.6	20.7	a	22 46.31	55 20 5.0 29.8	I 48.810	8 23 18.12	16 32 39.57	16 2457
98	8.7	8.8	10.8	12.9	15.1	17.3	c	23 12.99	55 14 5.0 29.8	III B 48.400	8 23 44.82	16 23 21.16	16 2461
99	8.2	52.0	54.0	55.8	57.9	0.0	a	24 25.55	55 14 “ “	I A 43.360	8 24 57.38	16 28 9.43	16 2474
100	8.1	47.7	49.8	52.0	54.2	56.3	c	24 52.01	55 14 “ “	III B 46.790	8 25 23.85	−16 22 51.19	−16 2478
101	8.0	4.8	6.9	9.1	13.3	15.0	c_3 d_2	25 4.81	55 14 “ “	V A 47.920	8 25 36.64	−16 29 39.74	−16 2480
102	8.9	53.6	55.4	57.4	59.3	1.5	a	31 27.25	56 28 5.0 0.3	I 47.940	8 31 58.97	17 40 30.29	17 2576
103	8.8	12.0	13.7	15.7	17.7	19.9	a	32 45.62	56 28 “ “	I A 47.820	8 33 17.34	17 43 41.75	17 2586
104	9.0	21.9	23.8	25.7	27.7	29.8	a	33 55.58	56 28 “ “	I B 49.470	8 34 27.32	17 37 48.10	17 2595
105	9.2	57.9	59.7	1.7	3.7	5.8	a	38 31.51	56 6 5.0 0.5	I 45.350	8 39 3.30	17 17 42.72	17 2626
106	9.5	29.0	30.9	32.8	34.7	36.9	a	39 2.61	56 6 “ “	III A 40.820	8 39 34.40	17 19 31.65	17 2631
107	9.0	24.0	25.8	27.7	29.8	31.9	a	44 57.55	55 54 5.0 0.7	I 45.710	8 45 29.38	−17 5 52.54	−16 2601

1894 MARCH 14. ZONE 28. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

108	8.7	33.0	34.9	36.7	38.7	40.8	a	1 6.48	55 32 5.0 0.4	I 46.810	9 1 38.43	−16 44 17.17	−16 2682
109	8.9	42.8	45.1	47.0	48.8	50.8	e	1 17.17	55 32 “ “	VII B 43.990	9 1 49.13	16 40 15.94	16 2683
110	8.0	21.1	22.9	24.9	26.9	29.0	a	3 54.56	55 12 5.0 0.6	I B 47.150	9 4 26.56	16 21 11.43	16 2694
111	8.0	25.2	26.9	28.9	30.9	33.0	a	4 58.59	55 12 “ “	I A 46.280	9 5 30.59	16 27 20.70	16 2701
112	8.7	1.0	2.8	4.7	6.7	8.9	a	6 34.43	55 12 “ “	I 46.390	9 7 6.44	16 24 10.13	16 2706
113	9.0	15.3	17.3	19.4	21.2	23.6	a	7 49.28	57 6 5.0 0.6	I 48.110	9 8 21.11	18 18 49.30	18 2608
114	8.2	39.2	41.0	43.0	45.0	47.3	a	9 13.01	57 6 “ “	I B 48.340	9 9 44.86	18 15 41.86	18 2613
115	9.1	17.8	19.7	21.6	23.4	25.8	a	9 51.47	56 30 5.0 1.5	III 43.450	9 10 23.37	17 41 21.60	17 2796
116	9.4	35.1	37.0	38.9	41.0	43.1	a	11 8.86	56 40 5.0 1.7	I 46.590	9 11 40.75	17 52 20.60	17 2803
117	9.0	47.6	49.4	51.3	53.4	55.5	a	12 21.28	56 40 “ “	I 43.830	9 12 53.18	−17 51 28.47	−17 2808

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
118	9.3	15.5	17.5	19.4	21.5	23.6	a	12 49.35	56	40	5.0	1.7	III A	42.760	9 13 21.25	−17 54 23.22	−17 2813
119	8.0	55.4	57.4	59.5	1.7	3.9	c	12 59.59	56	40	"	"	III B	48.140	9 13 31.50	17 49 40.23	17 2814
120	8.5	20.7	22.7	24.5	26.5	28.7	a	14 54.51	56	56	5.0	1.3	I	42.160	9 15 26.40	18 6 58.20	17 2823
121	9.0	44.3	46.2	48.0	50.1	52.3	a	16 17.93	56	6	5.0	1.3	I (A)	39.190	9 16 49.91	17 19 12.66	17 2828
122	8.5	15.8	17.9	20.2	22.4	24.6	c	16 20.19	56	6	"	"	III A	40.880	9 16 52.17	17 19 46.56	17 2829
123	8.0	13.3	15.5	17.6	19.9	22.0	c	17 17.67	56	20	5.0	1.2	III B	42.770	9 17 49.64	17 27 58.09	17 2835
124	9.2	46.1	48.1	50.4	52.6	54.7	c	17 50.39	56	20	"	"	V	45.240	9 18 22.36	17 31 59.26	17 2841
125	8.0	37.1	39.1	41.2	43.4	45.6	c	19 41.29	56	32	5.0	1.2	V B	41.550	9 20 13.26	17 39 37.84	17 2847
126	9.0	24.8	27.0	29.1	31.4	33.5	c	20 29.17	56	32	"	"	V B	44.240	9 21 1.14	17 40 29.30	17 2853
127	8.7	15.1	16.9	18.8	20.9	23.0	a	21 48.76	56	32	"	"	I A	40.330	9 22 20.73	17 45 37.50	−17 2859
128	8.6	3.0	4.8	6.8	8.8	11.0	a	22 36.67	56	24	5.0	1.2	III	44.690	9 23 8.66	−17 35 48.89	−17 2862
129	9.0	9.9	11.8	13.7	15.7	17.9	a	23 43.59	56	24	"	"	I B	50.060	9 24 15.59	17 34 17.36	17 2869
130	8.8	57.4	59.3	1.2	3.2	5.4	a	24 31.19	56	58	5.0	1.2	III	42.700	9 25 3.14	18 9 13.48	17 2875
131	9.0	44.9	46.9	49.1	51.3	53.4	c	24 49.13	56	58	"	"	III A	43.930	9 25 21.08	18 12 50.12	18 2694
132	9.3	41.1	43.2	45.3	47.5	49.6	c	25 45.35	55	56	5.0	0.1	V	41.815	9 26 17.40	17 6 54.73	16 2810
133	9.0	51.8	53.8	56.0	58.2	0.4	c	26 56.05	55	44	5.0	0.5	III A	38.060	9 27 28.12	16 56 54.68	16 2815
134	9.1	41.4	43.7	45.5	47.3	49.4	e	27 15.69	55	44	"	"	V A	45.810	9 27 47.76	16 59 23.82	16 2817
135	8.9	44.8	46.9	49.1	51.2	53.4	c	29 49.09	54	22	5.0	0.5	V	44.420	9 30 21.29	15 33 41.05	15 2838
136	8.8	15.0	17.3	19.5	21.7	23.8	c	30 19.47	54	22	"	"	V A	47.530	9 30 51.68	15 37 53.38	15 2841
137	8.4	29.6	31.9	33.8	35.6	37.7	e	31 3.75	57	0	5.0	0.6	VII	(43).060	9 31 35.75	−18 11 25.22	−17 2904
138	9.2	34.4	36.6	38.5	40.4	42.5	■	32 8.82	55	4	5.0	0.6	VII	42.840	9 32 40.99	−16 15 15.23	−16 2842
139	8.6	21.0	23.3	25.1	27.1	29.0	■	32 55.45	55	4	"	"	VII	45.120	9 33 27.62	16 15 58.85	16 2845
140	8.9	49.2	51.0	53.0	55.1	57.2	a	35 22.98	56	52	5.0	1.5	III	43.830	9 35 55.02	18 3 38.11	17 2929
141	8.8	19.7	21.9	24.0	26.0	28.3	c	35 23.99	56	52	"	"	V B	48.120	9 35 56.03	18 1 48.98	17 2930
142	8.0	12.5	14.4	16.5	18.8	21.0	c	36 16.65	56	52	"	"	III B	48.040	9 36 48.70	18 1 46.16	17 2933
143	9.0	5.7	7.8	9.9	12.2	14.4	c	37 10.01	57	4	5.0	0.7	V A	45.690	9 37 42.04	18 19 28.98	18 2760
144	9.1	33.0	35.1	37.3	41.4	43.1	$c_3 d_2$	37 32.90	57	4	"	"	VI B	41.920	9 38 4.95	18 11 52.56	17 2943
145	7.9	2.2	4.1	6.1	8.0	10.3	a	39 35.88	56	2	5.0	0.0	III	47.620	9 40 8.01	17 14 47.99	17 2952
146	9.3	37.7	40.1	42.2	44.4	46.5	c	39 42.19	56	2	"	"	V	41.800	9 40 14.33	17 12 58.88	17 2953
147	9.0	43.3	45.7	47.5	49.3	51.3	e	40 17.95	53	46	5.0	0.8	VII	44.580	9 40 50.26	−14 57 47.02	−14 2941
148	8.9	11.2	13.4	15.3	17.2	19.2	e	41 45.59	55	10	5.0	29.7	V	43.250	9 42 17.80	−16 21 24.22	−16 2885
149	9.0	38.1	40.5	42.4	44.1	46.3	e	42 12.60	55	10	"	"	VII A	42.300	9 42 44.82	16 24 20.58	16 2889
150	9.0	16.8	19.1	21.4	23.4	25.7	c	43 21.29	55	10	"	"	V A	50.090	9 43 53.51	16 26 47.86	16 2891
151	8.9	42.1	44.1	46.3	48.6	50.7	c	51 46.37	55	56	5.0	0.0	III	45.210	9 52 18.60	17 8 5.15	16 2924
152	8.8	53.6	55.5	57.4	59.5	1.8	a	54 27.46	56	56	5.0	0.2	I A	44.510	9 54 59.64	18 11 7.30	17 3026
153	9.4	32.4	34.3	36.2	38.3	40.6	a	55 6.25	56	56	"	"	III	47.470	9 55 38.44	18 8 52.41	17 3032
154	8.4	40.8	42.6	44.5	46.6	48.9	a	56 14.56	56	56	"	"	III B	40.640	9 56 46.76	18 3 30.32	17 3037
155	8.0	38.3	40.2	42.4	44.5	46.7	c	56 42.43	56	16	5.0	0.4	V A	42.920	9 57 14.67	17 30 38.73	17 3038
156	9.1	33.3	35.5	37.7	39.8	42.0	c	57 37.67	56	16	"	"	V B	44.890	9 58 9.93	17 24 51.04	17 3039
157	9.2	34.8	37.3	39.0	40.8	42.8	e	1 9.32	54	44	5.0	29.7	V A	48.970	10 1 41.70	−16 0 29.86	−15 2978
158	9.0	30.4	32.6	34.7	36.5	38.4	e	2 4.91	54	44	"	"	VII	46.140	10 2 37.30	−15 56 24.67	−15 2983
159	9.0	49.9	51.6	53.8	55.7	57.8	■	4 23.58	56	34	5.0	0.7	I	46.090	10 4 55.87	17 46 25.64	17 3074
160	8.0	42.0	43.7	45.7	47.6	50.0	a	5 15.69	56	58	5.0	0.2	I B	44.320	10 5 47.97	18 6 40.96	17 3078
161	9.0	20.5	22.5	24.7	27.0	29.1	c	5 24.77	56	58	"	"	III A	45.580	10 5 57.04	18 13 32.24	18 2856
162	8.8	1.6	3.8	5.8	10.1	11.7	$c_3 d_2$	6 1.55	56	36	5.0	0.7	VI	43.460	10 6 33.86	17 47 40.27	17 3083
163	8.7	2.3	4.4	6.6	10.7	12.5	$c_3 d_2$	7 2.28	55	24	5.0	0.4	V A	42.370	10 7 34.66	16 38 28.03	16 2993
164	9.1	32.8	35.1	36.8	38.8	40.8	e	7 7.16	55	24	"	"	VII B	40.050	10 7 39.55	16 31 19.83	16 2994
165	9.4	51.7	53.7	56.0	58.1	0.3	c	8 55.97	56	20	5.0	0.3	V	45.210	10 9 28.31	17 32 12.47	17 3095
166	9.2	23.5	25.4	27.6	29.8	32.0	c	9 27.67	56	20	"	"	V A	51.000	10 10 0.01	17 37 15.84	17 3099
167	8.0	48.8	50.8	53.0	54.9	57.4	c	10 52.99	55	48	5.0	0.4	V B	39.830	10 11 25.39	−16 55 16.42	−16 3004
168	8.8	42.5	44.2	46.1	48.1	50.4	a	12 15.96	55	48	"	"	I A	41.650	10 12 48.36	−17 2 13.55	−16 3013
169	9.3	44.6	46.3	48.3	50.3	52.5	a	13 18.10	55	48	"	"	I A	42.530	10 13 50.51	17 2 30.53	16 3015
170	9.6	24.0	26.1	28.0	29.9	32.0	a	13 57.69	55	48	"	"	I B	39.450	10 14 30.11	16 55 6.55	16 3017
171	......	55.1	57.1	59.4	1.6	3.7	c	13 59.39	55	48	"	"	III	39.420	10 14 31.82	16 58 20.06	16 3018
172	9.5	1.2	3.1	5.3	7.5	9.7	c	15 5.37	55	40	5.0	0.5	III B	38.050	10 15 37.82	16 46 41.51	16 3025
173	9.4	17.6	19.7	21.6	24.0	26.0	c	15 21.79	55	40	"	"	V B	34.840	10 15 54.24	16 45 42.04	16 3026
174	9.4	55.2	57.3	59.7	1.8	3.8	c	15 59.57	55	40	"	"	V B	34.510	10 16 32.02	16 45 35.89	16 3031
175	9.0	42.4	44.2	46.2	48.1	50.5	a	18 15.96	55	40	"	"	I B	49.560	10 18 48.43	16 50 19.57	16 3040
176	9.2	58.6	0.5	2.5	4.4	6.6	a	18 32.21	55	40	"	"	III A	50.750	10 19 4.67	16 57 9.49	16 3043
177	8.5	45.9	48.1	50.2	52.4	54.5	c	18 50.23	55	40	"	"	V A	45.800	10 19 22.70	−16 55 36.85	−16 3045
178	9.0	8.7	10.6	12.8	15.0	17.1	c	20 12.85	55	8	5.0	0.2	V B	37.810	10 20 45.36	−16 14 37.77	−16 3050
179	5.5	38.4	40.6	42.7	44.9	47.1	c	20 42.75	55	8	"	"	VI	43.090	10 21 15.26	16 19 31.55	16 3052
180	9.4	45.0	47.1	51.3	53.0	55.7	$c_4 d_3$	21 42.85	55	8	"	"	VI A	44.840	10 22 15.37	16 23 18.00	16 3059
181	9.3	32.3	34.6	36.6	38.4	40.4	e	22 6.79	55	8	"	"	V A	46.230	10 22 39.31	16 23 43.87	16 3061
182	9.2	50.5	52.6	54.7	56.9	58.9	c	24 54.73	55	58	5.0	0.5	III	43.390	10 25 27.23	17 9 38.51	16 3071
183	8.9	36.6	38.9	41.1	43.2	45.3	c	25 41.03	55	58	"	"	V B	35.815	10 26 13.54	17 4 3.68	16 3072
184	9.1	34.7	36.7	38.9	41.1	43.2	c	27 38.93	54	6	5.0	29.4	III	45.400	10 28 11.54	15 18 10.99	15 3077
185	9.6	18.9	20.9	23.1	25.2	27.3	c	28 23.09	54	6	"	"	III A	40.750	10 28 55.71	15 19 55.72	15 3078
186	9.3	19.4	21.6	23.7	25.9	28.0	c	29 23.73	54	14	5.0	0.0	V	42.630	10 29 56.36	15 25 20.91	15 3080
187	9.2	20.2	22.3	24.4	26.1	28.2	e	29 54.66	54	32	5.0	29.9	VII	42.650	10 30 27.28	−15 43 23.68	−15 3082
188	8.9	54.0	56.1	58.3	2.6	4.0	$c_3 d_2$	30 54.01	54	32	"	"	VI B	45.150	10 31 26.64	−15 40 58.31	−15 3088
189	9.3	1.3	3.4	5.7	7.9	9.8	c	32 5.63	54	8	5.0	0.0	V	46.820	10 32 38.28	15 20 40.86	15 3093
190	9.3	7.0	8.9	10.9	12.7	14.9	a	33 40.59	55	50	5.0	0.0	I	50.220	10 34 13.18	−17 3 47.65	16 3102

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	
191	8.7	39.2	41.3	43.4	45.7	47.8	c	33 43.49	55 50 5.0	0.0	III	48.730	10 34 16.08	−17 3 21.13	−16 3103
192	9.0	28.1	30.5	32.6	34.8	37.0	c	34 32.61	55 50 "	"	V B	42.010	10 35 5.21	16 58 2.57	16 3104
193	9.3	1.9	4.0	6.2	10.3	12.0	c_3 d_2	35 1.85	55 50 "	"	VI	45.760	10 35 34.45	17 2 27.19	16 3106
194	9.2	3.0	5.2	7.3	9.5	11.8	c	36 7.37	55 50 "	"	V B	49.220	10 36 39.98	17 0 20.10	16 3107
195	8.6	40.6	42.5	44.4	46.4	48.6	a	37 14.20	55 50 "	"	III	46.750	10 37 46.82	17 2 44.04	16 3112
196	8.5	47.0	49.1	51.3	53.3	55.6	c	37 51.27	54 58 5.0	29.4	III	44.930	10 38 23.93	16 10 6.47	15 3114
197	8.5	4.2	6.5	8.7	12.8	14.5	c_3 d_2	38 4.34	54 58 "	"	VI B	47.960	10 38 37.01	−16 7 54.12	−15 3116
198	7.9	36.1	38.1	39.9	41.9	44.0	a	42 9.37	53 30 5.0	29.4	(I)	51.290	10 42 42.12	−14 44 2.02	−14 3186
199	8.2	7.0	9.0	11.1	13.4	15.5	c	42 11.21	53 30 "	"	(III)	47.880	10 42 43.96	14 42 58.93	14 3188^1
200	8.2	36.7	39.2	41.1	42.9	44.9	e	42 11.52	53 30 "	"	VII	47.325	10 42 44.28	14 42 51.44	14 3188^2
201	8.0	33.9	35.9	38.0	40.1	42.4	c	43 38.07	53 30 "	"	V B	42.500	10 44 10.85	14 38 5.97	14 3193
202	9.2	39.5	41.4	43.3	45.2	47.5	a	46 13.10	56 0 5.0	0.3	I B	47.980	10 46 45.80	17 9 55.49	16 3139
203	9.4	40.8	42.5	44.4	46.5	48.7	a	47 14.32	56 0 "	"	I A	43.790	10 47 47.03	17 15 1.41	17 3253
204	7.7	29.7	31.6	33.6	35.5	37.7	a	48 3.01	53 42 5.0	29.1	III	47.060	10 48 35.81	14 54 44.64	14 3213
205	9.0	52.1	53.9	55.9	57.9	0.2	a	49 25.39	53 42 "	"	I	48.465	10 49 58.20	14 55 9.74	14 3221
206	8.0	50.9	52.7	54.4	56.5	58.5	a	54 23.99	53 42 5.0	29.2	I	43.600	10 54 56.84	14 53 37.88	14 3237
207	7.7	53.4	54.9	56.9	58.8	1.1	a	55 26.46	54 2 5.0	29.4	I	48.660	10 55 59.31	−15 15 15.41	−15 3178
208	......	2.1	4.0	5.9	7.9	10.0	a	56 35.40	54 2 "	"	III (B)	39.600	10 57 8.26	−15 9 12.59	−14 3245
209	8.9	11.0	13.5	15.4	17.1	19.1	e	56 45.69	54 12 5.0	0.0	VII	43.060	10 57 18.55	15 23 34.68	15 3181
210	8.4	58.0	0.0	2.2	4.3	6.6	c	58 2.23	54 12 "	"	V B	46.380	10 58 35.10	15 21 24.17	15 3187
211	8.2	0.3	2.2	4.5	6.5	8.6	c	59 4.43	53 10 5.0	0.2	V	48.250	10 59 37.34	14 23 9.37	14 3255
212	8.7	59.2	1.0	3.0	4.9	7.0	a	0 32.49	54 18 5.0	0.2	I	44.400	11 1 5.38	15 29 56.18	15 3193
213	8.8	35.9	38.0	40.1	42.4	44.3	c	0 40.15	54 18 "	"	III B	44.200	11 1 13.05	15 26 41.85	15 3194
214	8.0	30.8	32.8	35.0	37.3	39.4	c	1 35.07	53 44 5.0	29.8	V A	48.970	11 2 7.98	15 0 37.78	14 3262
215	8.4	58.6	0.8	2.9	5.1	7.1	c	3 2.91	53 44 "	"	III (A)	50.690	11 3 35.84	15 1 9.19	14 3266
216	8.9	39.2	41.5	43.5	45.3	47.3	e	3 13.89	53 44 "	"	V	(54).350	11 3 46.82	14 59 7.40	14 3268
217	8.6	31.3	32.8	34.7	36.6	38.8	a	5 4.38	54 42 5.0	29.6	III	46.540	11 5 37.31	−15 54 40.13	−15 3216

Reduction Elements. Zones 27 and 28.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 14.3....	+0.249	−0.099	+0.174	+0.208	−0.094	+0.201
14.5....	+0.167	−0.088	+0.178			
			+0.251			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	β Canis Majoris		ξ² Canis Majoris		θ Canis Majoris		Piazzi VII. 85		Piazzi VIII. 95		6 Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	56 44 5.75*		61 42 3.00		50 44 2.45		47 36 2.70		58 2 2.50		50 56 2.70	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq......	44.125	5 16.06	45.560	5 43.44	45.790	5 48.19	47.395	6 18.19		6 16.19		5 29.96
II | Red. to Mer......	.095	1.63	.510	1.57	.770	1.69	.325	1.71		1.62	44.860	1.70
VI | Inclination	43.900		.370		.630		.200		47.170	2.04	.700	0.82
VII | Refraction	.875	1 29.2	.310	1 48.7	.560	1 11.8	.145	1 4.4	.150	1 34.8	.630	1 13.0

	Lalande 17333		15 Hydrae		Lalande 19433		ν² Hydrae		β Crateris		δ Crateris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	57 12 2.85		45 36 2.45		57 20 3.25		51 22 2.65		61 4 2.20		53 2 2.20	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq......	44.365	5 20.17	47.900	6 28.32	45.170	5 35.66	48.120	6 31.87		5 45.71	45.575	5 43.75
II | Red. to Mer......	.295	1.63	.900	1.73	.100	1.63	.085	1.69	45.695	1.61	.520	1.67
VI | Inclination	.130		.690		44.945		47.885		.530	0.82	.380	
VII | Refraction	.070	1 31.9	.700	1 0.6	.900	1 32.6	.850	1 14.4	.450	1 47.8	.345	1 19.4

* Microscope readings discordant.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
β Canis Majoris	6 17 46.07	11	+0.34	+16.07	56 50 52.6	[35.6]
23 H. Camelopardalis	6 27 55.67	9	+0.03	[−16.18]	319 16	....
ξ² Canis Majoris	6 30 21.05	11	+0.37	+16.05	61 49 36.7	39.2
θ Canis Majoris	6 49 0.33	11	+0.31	+16.02	50 51 4.1	39.2
Piazzi VII. 85	7 16 41.57	11	+0.30	+16.11	47 43 27.0	39.5
Piazzi VIII. 95	8 26 29.95	11	+0.35	+15.98	58 9 57.2	40.5
Groombridge 1446	8 27 44.14	6	+0.06	[+16.22]	324 56	....
6 Hydrae	8 34 44.92	11	+0.31	+16.11	51 2 48.2	40.1
Lalande 17333	8 41 40.26	11	+0.34	+16.24	57 18 56.5	38.9
15 Hydrae	8 46 6.70	11	+0.29	+16.18	45 43 33.1	39.8
Groombridge 1586	9 48 44.53	3	+0.06	[+16.01]	325 32	....
Lalande 19433	9 49 37.07	11	+0.34	+16.23	57 27 13.1	39.1
υ² Hydrae	9 59 42.65	11	+0.31	+16.27	51 29 50.6	40.8
Bradley 1508	10 51 21.81	10	+0.04	[+16.02]	320 36	....
β Crateris	11 6 11.57	11	+0.37	+16.21	61 11 38.1	39.2
δ Crateris	11 13 47.50	11	+0.32	+16.16	53 9 7.0	40.1

h		s
6.728	*dt*	+16.062
	Hourly rate	+ 0.0408

Adopted Equator Point..........38° 56′ 39″.67

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 13	29.825	45.5	44.9
7 16	29.845	44.0	43.8
7 57	29.855	42.4	41.5
8 46	29.875	41.2	40.3
9 48	29.885	40.2	39.3
10 25	29.885	39.1	38.0
11 7	29.885	37.9	36.8

Note.
26, 123. Faint companion, n. p.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					$D=$ Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	+0.321	6 30	......	+15.626	+15.480	+15.332	+15.184	....	−3.60	−3.87	−4.13	−4.40
54	0.326	7 0	......	15.540	15.398	15.256	15.110	....	4.03	4.28	4.54	4.78
55	0.332	7 30	+15.628	15.496	15.361	15.225	15.084	−4.26	4.50	4.74	4.98	5.22
56	0.337	8 0	15.618	15.494	15.368	15.241	......	4.85	5.04	5.28	5.48	....
57	+0.342	8 30	......	15.536	15.421	15.307	15.189	....	5.65	5.84	6.03	6.20
		9 0	......	15.618	15.518	15.416	15.313	....	6.27	6.44	6.59	6.75
		9 30	15.827	15.742	15.656	15.570	15.481	6.81	6.93	7.05	7.21	7.30
		10 0	15.973	15.904	15.836	15.767	+15.694	7.51	7.59	7.69	7.78	−7.86
		10 30	16.153	16.103	16.051	15.998	......	8.23	8.29	8.34	8.39	....
		11 0	16.365	16.332	16.302	16.266	......	8.94	8.96	8.97	8.98	....
		11 30	+16.604	+16.592	+16.578	+16.564	......	−9.63	−9.61	−9.58	−9.54	....

APPARENT RIGHT ASCENSION.	R					
	53°	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″	″
6 30	77.54	80.41	83.41	86.58	89.89	91.62
7 0	77.64	80.52	83.52	86.70	90.01	91.75
7 30	77.84	80.72	83.73	86.92	90.24	91.98
8 0	78.11	81.00	84.02	87.22	90.55	92.30
8 30	78.27	81.17	84.20	87.40	90.74	92.49
9 0	78.40	81.30	84.33	87.54	90.89	92.64
9 30	78.47	81.38	84.41	87.62	90.97	92.73
10 0	78.60	81.51	84.55	87.76	91.12	92.88
10 30	78.78	81.70	84.74	87.96	91.33	93.09
11 0	78.90	81.83	84.88	88.10	91.47	93.24
11 30	79.05	81.98	85.04	88.27	91.64	93.41

1894 MARCH 20. ZONE 29. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″ ″		r	h m s	° ′ ″	°
1	.....	58.5	0.2	2.3	4.1	6.5	a	33 31.99	55 36	5.0 27.6	I	46.800	6 34 7.99	−16 47 5.81	−16 1554
2	8.0	29.8	31.6	33.7	35.6	37.9	a	52 3.21	54 26	5.0 28.3	I	44.980	6 52 39.34	15 36 37.69	15 1573
3	7.8	13.1	15.0	17.5	19.6	21.8	c	52 17.41	55 4	5.0 28.2	V	46.415	6 52 53.45	16 15 10.27	16 1673
4	7.7	21.3	23.0	25.0	27.0	29.1	a	56 54.86	56 18	5.0 28.8	I	48.910	6 57 30.72	17 30 0.47	17 1733
5	8.2	57.4	59.5	1.7	3.7	6.0	c	57 1.67	56 18	" "	II A	49.410	6 57 37.52	17 33 24.15	17 1737
6	7.8	34.6	36.6	38.8	41.0	43.2	c	57 38.85	56 18	" "	III B	46.800	6 58 14.72	17 26 10.16	17 1743
7	9.3	26.6	28.8	30.6	32.7	34.6	e	58 0.81	56 18	" "	VII	41.195	6 58 36.67	17 27 39.04	17 1748
8	8.9	32.2	34.0	36.0	38.0	40.3	a	0 5.87	56 18	" "	I	40.960	7 0 41.73	17 27 30.72	17 1766
9	9.5	51.9	53.6	55.5	57.6	59.9	a	1 25.49	56 18	" "	III A	50.940	7 2 1.33	17 33 56.28	17 1778
10	9.0	54.7	56.8	59.0	1.1	3.3	c	1 58.99	56 18	" "	V	41.450	7 2 34.85	−17 27 44.45	−17 1782
11	8.7	0.3	2.1	4.2	6.5	8.5	c	3 4.33	56 18	" "	III B	39.740	7 3 40.19	−17 23 58.48	−17 1789
12	8.0	23.1	25.2	27.4	31.8	33.4	c_3 d_2	3 23.15	56 18	" "	V B	39.260	7 3 59.01	17 23 51.05	17 1792
13	8.3	48.5	50.5	52.8	56.9	58.6	c_3 d_2	4 48.42	56 18	" "	VI A	44.760	7 5 24.26	17 32 2.52	17 1809
14	8.7	10.9	12.9	15.1	17.1	19.3	c	6 15.07	55 58	5.0 28.8	V	44.110	7 6 50.96	17 8 36.22	17 1827
15	7.0	47.0	49.7	51.5	53.4	55.3	e	6 21.58	55 58	" "	VII	48.170	7 6 57.47	17 9 54.98	17 1828
16	8.9	37.5	39.6	41.8	44.0	46.1	c	8 41.81	56 10	5.0 29.0	III	47.280	7 9 17.68	17 21 36.81	17 1856
17	9.0	24.3	26.8	28.6	30.5	32.4	e	8 58.56	56 56	5.0 29.0	VII	44.890	7 9 34.32	18 6 56.80	18 1735
18	9.1	9.2	11.0	13.0	14.9	16.9	a	10 42.64	55 26	5.0 28.6	III	47.710	7 11 18.61	16 37 43.67	16 1856
19	9.0	58.1	0.1	2.1	4.5	6.7	c	11 2.31	55 26	" "	III B	47.360	7 11 38.28	16 34 24.85	16 1857
20	8.3	39.3	41.7	43.6	45.3	47.4	e	11 13.75	55 26	" "	V B	40.760	7 11 49.73	−16 32 20.88	−16 1860
21	9.2	59.7	2.0	4.0	5.8	7.7	e	11 34.13	55 26	" "	VII	43.820	7 12 10.10	−16 36 33.12	−16 1863
22	9.4	7.1	9.2	11.4	13.5	15.6	c	13 11.37	55 26	" "	V A	40.170	7 13 47.33	16 38 35.97	16 1881
23	9.2	2.3	4.3	6.5	8.7	10.9	c	15 6.55	55 26	" "	V A	43.250	7 15 42.51	16 39 35.52	16 1904
24	8.5	53.5	55.5	57.8	59.9	2.0	c	15 57.75	55 26	" "	III	45.680	7 16 33.71	16 37 7.59	16 1911
25	8.7	47.0	48.9	50.8	52.8	55.1	a	27 20.67	56 6	5.0 28.4	III	46.860	7 27 56.54	17 17 37.35	17 2021
26	7.2	32.5	34.3	36.1	38.1	40.3	a	29 5.81	54 48	5.0 28.0	I	43.420	7 29 41.85	15 58 26.97	15 1904
27	8.3	39.0	40.7	42.8	44.7	46.9	a	30 12.39	55 0	5.0 28.3	I	44.730	7 30 48.40	16 10 53.11	16 2031
28	8.1	50.3	52.2	54.1	56.0	58.1	a	31 23.45	53 4	5.0 27.0	I	47.400	7 31 59.71	14 15 38.76	14 2020
29	8.0	19.6	21.7	23.8	26.0	28.3	c	31 23.89	53 4	" "	III	47.590	7 32 0.15	14 15 44.18	14 2021
30	8.7	6.4	8.4	10.7	12.8	15.0	c	34 10.67	55 0	5.0 28.6	VI B	37.030	7 34 46.69	−16 5 20.32	−15 1961
31	8.5	25.2	27.6	29.4	31.1	33.3	e	34 59.65	55 8	5.0 28.1	VII	46.880	7 35 35.64	−16 19 41.46	−16 2074
32	9.1	15.9	18.2	20.0	21.7	23.7	e	35 50.24	55 8	" "	VII B	47.360	7 36 26.24	16 16 38.52	16 2079
33	.....	57.1	59.1	1.1	2.9	5.0	a	39 30.75	55 58	5.0 27.8	I B	35.820	7 40 6.65	17 2 58.09	16 2105
34	.....	5.4	7.2	9.2	11.0	13.0	a	40 38.87	55 58	" "	III B	43.670	7 41 14.77	17 5 29.82	16 2116
35	9.4	46.0	47.9	49.9	51.7	54.0	a	42 19.64	55 58	" "	I A	49.680	7 42 55.52	17 13 48.71	17 2158
36	9.4	48.0	49.9	52.0	53.9	56.0	a	43 21.70	55 58	" "	I A	49.930	7 43 57.58	17 13 53.96	17 2165
37	8.2	6.4	8.4	10.1	12.4	14.5	a	43 40.09	55 58	" "	III	46.060	7 44 15.98	17 9 29.04	17 2171
38	9.4	57.7	59.6	1.7	4.0	6.1	c	44 1.83	55 58	" "	V B	38.450	7 44 37.74	17 3 53.56	16 2138
39	8.3	41.8	43.6	45.6	47.5	49.7	a	46 15.13	54 26	5.0 27.3	I	45.470	7 46 51.22	15 37 12.56	15 2090
40	8.1	14.1	16.1	18.5	20.8	22.9	c	46 18.49	55 10	5.0 27.5	V	44.720	7 46 54.49	−16 21 3.89	−16 2162
41	9.1	43.8	45.6	47.6	49.6	51.8	a	47 17.29	55 10	" "	III A	48.850	7 47 53.28	−16 25 34.43	−16 2168
42	8.8	4.9	7.0	9.1	11.2	13.5	c	48 9.15	54 24	5.0 26.6	III	48.410	7 48 45.24	15 36 10.76	15 2110
43	9.3	12.5	14.5	16.7	19.0	21.2	c	49 16.79	56 22	5.0 28.3	III	43.080	7 49 52.64	17 32 36.30	17 2221
44	9.1	43.7	46.0	48.0	49.9	51.8	e	49 18.02	56 22	" "	VII	42.080	7 49 53.87	17 32 20.35	17 2222
45	9.6	2.9	5.0	7.0	9.2	11.4	c	51 7.11	55 32	5.0 28.3	V	45.300	7 51 43.06	16 43 18.56	16 2201
46	9.4	15.6	17.4	19.3	21.1	23.4	a	53 48.90	54 46	5.0 27.0	III	45.150	7 54 24.95	15 57 12.46	15 2166
47	9.5	10.0	12.0	14.0	16.1	18.3	c	54 14.09	54 46	" "	V B	44.850	7 54 50.15	15 53 56.17	15 2170
48	7.9	38.9	40.9	43.1	45.3	47.4	c	55 43.13	54 16	5.0 27.8	V	46.630	7 56 19.25	15 27 42.14	15 2190
49	8.7	47.4	49.5	51.7	53.9	56.1	c	56 51.73	57 2	5.0 29.1	V	46.230	7 57 27.51	18 13 43.72	18 2134
50	8.4	40.5	42.3	44.2	46.4	48.5	a	58 14.29	57 2	" "	I A	50.600	7 58 50.06	−18 18 17.32	−18 2147
51	8.9	4.9	7.0	9.0	10.9	12.9	e	58 39.38	54 24	5.0 27.8	VII	45.860	7 59 15.48	−15 35 30.59	−15 2230
52	9.0	59.6	1.7	3.9	6.1	8.4	c	0 3.95	55 16	5.0 27.8	V B	39.850	8 0 39.96	16 22 25.40	16 2279
53	9.4	46.0	48.3	50.4	52.7	54.8	c	0 50.45	55 16	" "	V A	39.550	8 1 26.45	16 28 45.39	16 2285
54	9.3	30.2	32.4	34.3	36.1	38.0	e	1 4.50	55 16	" "	VII A	47.370	8 1 40.50	16 31 15.67	16 2287
55	8.9	31.5	33.7	35.7	37.6	39.6	e	3 5.76	56 18	5.0 27.2	VII	45.810	8 3 41.64	17 29 36.71	17 2349
56	9.1	43.0	45.0	47.1	49.3	51.4	c	5 47.17	54 24	5.0 27.4	III A	40.730	8 6 23.28	15 37 5.87	15 2297
57	9.3	15.5	17.4	19.6	21.6	23.7	c	7 19.57	54 24	" "	V A	49.240	8 7 55.67	15 39 50.02	15 2315
58	9.3	41.5	43.4	45.4	47.4	49.6	a	9 14.90	54 2	5.0 27.0	III	47.090	8 9 51.06	15 13 54.11	15 2336
59	9.0	47.7	49.8	52.0	54.2	56.1	c	9 51.97	55 58	5.0 28.8	V A	47.720	8 10 27.89	17 13 27.37	17 2408
60	9.4	48.4	50.5	52.6	54.8	56.9	c	10 52.65	55 58	" "	V B	36.280	8 11 28.59	−17 3 24.63	−16 2373
61	8.9	32.6	34.5	36.3	38.2	40.4	a	12 6.12	55 58	" "	III B	40.230	8 12 42.07	−17 4 38.78	−16 2381
62	9.2	24.3	26.1	28.1	30.0	32.3	a	13 58.01	56 44	5.0 29.0	I	45.600	8 14 33.86	17 55 34.71	17 2439
63	9.3	2.3	4.1	6.1	8.2	10.4	a	14 36.08	56 44	" "	I	50.070	8 15 11.93	17 57 0.07	17 2442
64	9.7	22.8	24.8	27.0	29.2	31.4	c	15 27.05	56 18	5.0 28.6	V	51.830	8 16 2.96	17 31 35.87	17 2453
65	9.4	36.2	38.5	40.2	42.0	44.0	e	16 10.36	56 18	" "	VII B	41.850	8 16 46.28	17 25 15.16	17 2461
66	8.9	45.3	47.0	49.0	51.0	53.2	a	18 18.69	55 8	5.0 29.1	III	43.760	8 18 54.74	16 18 58.63	16 2424
67	9.0	25.6	27.4	29.3	31.4	33.6	a	22 59.22	56 12	5.0 28.7	I B	49.635	8 23 35.16	−17 21 41.24	−17 2507

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
68	9.3	....	....	33.5	35.6	37.7	a	24 3.41	56 12 5.0 28.7	I A 48.130	8 24 39.34	−17 27 38.54	−17 2516
69	8.7	13.5	15.4	17.8	19.8	22.0	c	24 17.71	56 12 " "	V 47.290	8 24 53.65	17 24 12.86	17 2518
70	9.0	41.0	43.0	45.2	47.3	49.5	c	25 45.21	54 6 5.0 27.5	III 45.860	8 26 21.39	15 17 37.97	15 2473
71	9.0	15.5	17.9	19.7	21.6	23.5	e	25 50.13	54 6 " "	VII B 40.870	8 26 26.32	15 12 53.66	15 2474
72	9.0	45.6	47.4	49.2	51.1	53.5	a	31 19.07	55 56 5.0 28.9	I B 41.280	8 31 55.08	17 3 4.83	16 2519
73	8.9	32.0	33.8	35.8	37.9	40.0	a	32 5.62	55 56 " "	I A 39.260	8 32 41.62	17 8 52.18	16 2525
74	9.2	17.8	20.0	22.1	24.3	26.6	c	32 22.17	56 54 5.8 0.0	V 46.970	8 32 58.06	18 6 13.19	17 2583
75	9.3	11.4	13.7	15.7	17.6	19.6	e	32 45.65	56 54 " "	VII B 47.970	8 33 21.55	18 3 21.32	17 2587
76	8.4	21.0	23.0	24.7	26.8	29.0	a	36 54.61	55 52 5.0 27.2	I 47.730	8 37 30.63	17 4 21.04	16 2559
77	9.1	53.1	55.0	57.0	58.8	1.0	a	38 26.56	55 0 5.0 27.9	I 48.700	8 39 2.68	−16 12 37.93	−16 2565
78	9.2	49.2	51.4	53.5	55.6	57.9	c	38 53.53	55 48 5.0 27.0	III 48.150	8 39 29.56	−17 0 31.35	−16 2568
79	9.2	18.5	20.4	22.2	24.3	26.4	a	40 52.05	55 48 " "	I B 43.390	8 41 28.10	16 55 47.41	16 2579
80	9.1	14.3	16.5	18.6	20.7	23.0	c	48 18.63	55 44 5.0 27.8	III B 40.560	8 48 54.72	16 50 58.32	16 2624
81	8.0	48.6	51.1	53.2	55.0	57.0	e	48 23.20	55 44 " "	VII A 45.000	8 48 59.28	16 58 51.14	16 2625
82	8.8	2.8	5.2	7.0	8.8	10.9	e	49 37.49	53 32 5.0 27.5	VII 46.340	8 50 13.80	14 43 57.92	14 2700
83	9.2	29.4	31.5	33.7	35.9	38.0	c	51 33.71	55 26 5.0 28.2	III 48.030	8 52 9.83	16 38 33.36	16 2640
84	8.7	7.4	9.7	11.6	13.4	15.5	e	54 42.16	52 56 5.0 28.1	V 47.550	8 55 18.54	−14 8 20.08	−13 2735

Reduction Elements. Zone 29.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 20.3....	+0.241	−0.283	+0.014	+0.237	−0.257	+0.015
20.4 ...	+0.233	−0.231	+0.016			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ξ² Canis Majoris		α Canis Majoris		θ Canis Majoris		Piazzi VI. 303		6 Hydrae		Lalande 17333	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	61 42 1.45		55 24 1.80		50 44 1.70		64 6 1.50		50 56 2.65		57 12 1.85	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.820	5 48.51	45.060	5 34.30	46.070	5 52.75	43.310	5 1.13		5 33.48	44.670	5 26.46
II Red. to Mer......	.780	1.57	.040	1.65	.000	1.69	.285	1.55	45.055	1.70	.630	1.63
VI Inclination	.630		44.870		45.820		.150		44.870	0.82	.445	
VII Refraction.......	.590	1 46.0	.860	1 22.9	.820	1 10.1	.110	1 57.7	.820	1 11.2	.440	1 29.7

	15 Hydrae		Piazzi VIII. 22	
	° ′ ″		° ′ ″	
CIRCLE READING.	45 36 1.25		54 34 0.85	
	r	′ ″	r	′ ″
I Microm. Eq......	48.140	6 32.90	43.590	5 6.42
II Red to Mer......	.115	1.73	.575	1.65
VI Inclination	47.960		.450	
VII Refraction.......	.940	59.2	.390	1 21.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
23 H. Camelopardalis.	6 27 50.59	8	+0.18	[+20.46]	319 16	....
ξ² Canis Majoris.....	6 30 16.67	11	+0.14	+20.54	61 49 37.5	39.8
α Canis Majoris.....	6 40 8.83	11	+0.11	+20.38	55 31 0.7	41.5
θ Canis Majoris.....	6 48 56.05	11	+0.09	+20.42	50 51 6.2	41.2
Piazzi VI. 303	6 53 55.35	11	+0.15	+20.42	64 13 1.9	41.7
Groombridge 1446.	8 27 39.53	10	+0.07	[+20.53]	324 56	....
6 Hydrae...........	8 34 40.72	11	+0.09	+20.47	51 2 49.8	41.3
Lalande 17333.....	8 41 36.11	11	+0.12	+20.54	57 18 59.6	41.5
15 Hydrae...........	8 46 2.56	11	+0.07	+20.49	45 43 35.1	41.5
Piazzi VIII. 227....	8 53 26.03	11	+0.10	+20.56	54 40 30.2	40.7

6.722

h 6.722............*dt*..................... +20.440 s

Hourly rate .... + 0.0373

Adopted Equator Point.......... 38° 56′ 41.″15

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 23	29.975	60.8	59.8
7 25	29.985	58.4	56.3
8 20	29.975	56.3	54.3
8 56	29.975	55.2	52.8

Notes.

1, 23, 30, 33, 56. Clouds.

84. Clouds follow this.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	A = α to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	+0.093	6 30	......	......	+15.726	+15.581	+15.435	+15.287
53	0.098	7 0	......	......	15.637	15.496	15.355	15.211
54	0.103	7 30	......	+15.717	15.585	15.452	15.317	15.181
55	0.107	8 0	......	15.699	15.575	15.451	15.325	15.197
56	0.111	8 30	+15.828	15.718	15.606	15.492	15.379	15.263
57	+0.115	9 0	+15.870	+15.775	+15.675	+15.576	+15.475	+15.372

APPARENT RIGHT ASCENSION.	D = Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
6 30	....	....	−3.59	−3.86	−4.14	−4.41	74.25	75.60	78.40	81.32	84.41	87.64
7 0	....	....	4.12	4.39	4.65	4.92	74.52	75.88	78.69	81.62	84.72	87.96
7 30	....	−4.47	4.73	4.99	5.24	5.49	74.76	76.12	78.94	81.88	85.00	88.25
8 0	....	5.13	5.38	5.61	5.84	6.07	74.92	76.28	79.10	82.05	85.17	88.43
8 30	−5.66	5.85	6.08	6.29	6.50	6.71	75.08	76.44	79.27	82.22	85.35	88.61
9 0	−6.42	−6.61	−6.80	−6.99	−7.17	−7.36	75.25	76.61	79.45	82.41	85.55	88.82

1894 MARCH 23. ZONE 30. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.7	55.6	57.4	59.3	1.3	3.5	a	48 29.08	55 30 5.0 27.0	I A	45.990	6 49 6.20	−16 44 11.98	−16 1644
2	8.2	54.8	56.6	58.5	0.6	2.7	a	49 28.28	55 30 " "	I B	46.230	6 50 5.41	16 37 51.56	16 1649
3	8.4	15.7	17.5	19.4	21.5	23.7	a	50 49.11	54 50 5.0 26.8	I	43.930	6 51 26.31	16 0 18.74	15 1565
4	8.2	31.9	33.7	35.6	37.7	39.8	a	52 5.51	56 14 5.0 26.9	I	48.010	6 52 42.51	17 25 41.09	17 1699
5	8.8	10.8	12.8	15.1	17.2	19.6	c	52 15.11	56 56 5.0 27.0	V	44.640	6 52 52.02	18 6 42.68	18 1613
6	8.6	34.4	36.1	38.1	40.1	42.3	a	56 7.94	56 4 5.0 27.0	III	45.990	6 56 44.96	17 15 6.04	17 1729
7	......	22.7	24.6	26.4	28.4	30.6	a	56 56.28	56 4 " "	I B	48.490	6 57 33.30	17 12 39.94	17 1735
8	9.1	23.1	24.7	26.8	28.9	31.1	a	57 56.47	54 52 5.0 27.2	I	42.375	6 58 33.65	16 1 52.95	15 1616
9	9.1	12.3	14.1	16.0	18.0	20.3	a	58 45.90	56 8 5.0 27.5	III	47.700	6 59 22.90	17 19 40.36	17 1752
10	9.2	58.7	0.7	2.9	5.0	7.2	c	59 2.91	56 8 " "	III B	50.280	6 59 39.92	−17 17 17.27	−17 1756
11	8.7	23.3	25.4	27.6	29.8	31.9	c	59 27.61	56 8 " "	VI B	44.590	7 0 4.62	−17 15 31.44	−17 1760
12	8.8	32.9	34.7	36.6	38.7	41.0	a	16 6.35	54 58 5.0 29.9	I	45.560	7 16 43.48	16 9 4.09	16 1914
13	8.9	9.1	11.0	13.0	14.8	17.0	a	16 42.55	54 58 " "	I	42.200	7 17 19.68	16 8 0.42	16 1921
14	7.5	38.2	40.0	42.0	43.8	46.0	a	17 11.56	54 58 " "	III B	49.870	7 17 48.69	16 7 16.16	16 1923
15	9.4	35.7	37.9	40.0	42.2	44.5	c	17 40.07	54 58 " "	III	51.120	7 18 17.19	16 10 52.49	16 1927
16	9.0	57.7	59.6	1.5	3.5	5.6	a	19 31.43	56 42 5.0 0.3	III	45.050	7 20 8.32	17 53 3.15	17 1960
17	8.4	22.7	24.5	26.5	28.5	30.7	a	20 56.44	56 42 " "	I A	45.450	7 21 33.32	17 56 22.84	17 1970
18	8.3	59.4	1.6	3.8	6.0	8.1	c	21 3.79	56 42 " "	III (A)	42.080	7 21 40.67	17 55 20.45	17 1971
19	7.8	53.0	55.3	57.3	59.2	1.1	e	31 27.80	53 4 5.0 0.4	VII B	49.510	7 32 5.14	14 13 14.18	14 2025
20	8.9	38.9	40.9	43.1	47.4	48.9	c_3 d_2	33 38.84	54 58 5.0 29.2	V	45.460	7 34 15.94	−16 9 13.59	−16 2062
21	8.9	12.5	14.8	16.7	18.6	20.5	e	33 46.97	54 58 " "	VII A	44.280	7 34 24.07	−16 12 5.48	−16 2063
22	9.0	6.0	7.8	9.7	11.6	13.9	a	36 39.17	53 34 5.0 29.2	I	46.460	7 37 16.44	14 45 26.76	14 2134
23	9.3	11.8	13.8	15.9	18.1	20.2	c	37 15.97	54 22 5.0 29.5	V	46.260	7 37 53.14	15 33 28.96	15 1990
24	8.1	3.3	5.2	7.3	9.2	11.4	a	39 37.05	56 16 5.0 29.9	I	45.030	7 40 13.98	17 27 8.87	17 2130
25	8.9	20.1	21.9	23.9	25.9	28.0	a	39 53.74	56 16 " "	III A	40.730	7 40 30.67	17 29 2.07	17 2133
26	9.2	25.9	27.9	29.7	31.7	33.9	a	40 59.58	56 16 " "	I B	41.340	7 41 36.52	17 22 46.97	17 2144
27	9.1	55.5	57.8	59.9	2.1	4.2	c	40 59.91	56 16 " "	III	40.660	7 41 36.84	17 25 48.13	17 2146
28	9.5	0.5	2.4	4.4	6.2	8.5	a	42 34.22	56 38 5.0 1.1	III B	41.910	7 43 11.11	17 45 2.02	17 2160
29	9.6	7.4	9.2	11.0	12.9	15.3	a	43 40.99	56 38 " "	I (B)	46.920	7 44 17.88	[17 46 36.12]	17 2172
30	8.9	44.5	46.6	48.7	50.8	53.0	c	43 48.73	56 38 " "	III	49.370	[7 44 25.61]	[−17 50 36.94]	−17 2173
31	8.7	24.0	25.7	27.8	29.8	32.0	a	44 57.69	56 38 " "	III	40.915	[7 45 34.58]	[−17 47 56.50]	−17 2179
32	7.8	27.4	29.3	31.1	33.0	35.2	a	46 1.07	56 50 5.0 1.3	I B	49.830	7 46 37.93	17 59 33.29	17 2185
33	8.2	6.6	8.5	10.5	12.3	14.7	a	46 40.41	56 50 " "	I A	50.030	7 47 17.26	18 6 2.92	17 2188
34	9.0	38.1	40.2	42.4	44.6	46.7	c	46 42.41	56 50 " "	III	47.270	7 47 19.27	18 1 59.00	17 2189
35	9.1	45.2	47.2	49.5	51.6	53.8	c	47 49.47	56 4 5.0 1.4	V	45.170	7 48 26.43	17 15 18.88	17 2205
36	8.0	57.2	59.3	1.6	3.7	6.0	c	49 1.57	56 52 5.0 1.2	III	47.820	7 49 38.43	18 4 10.56	17 2219
37	......	28.5	......	32.9	35.0	......	c	49 32.86	56 52 " "	V B	43.050	7 50 9.72	17 59 29.24	17 2225
38	9.3	53.6	55.4	57.3	59.3	1.6	a	11 27.35	57 0 10.2 2.3	I A	50.250	8 12 4.20	−18 16 21.55	−18 2248

Reduction Elements. Zone 30.

1894.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
March 23.3....	+0.289	−0.171	+0.185	+0.276	−0.153	+0.185
23.4....	+0.264	−0.135				

REDUCTION OF THE DECLINATION OF THE ZERO STARS.

CIRCLE READING.	α Canis Majoris		Piazzi VI. 303		29 Canis Majoris		Piazzi VII. 116		ι Navis		Bradley 1212	
	° ′ ″ 55 24 1.05		° ′ ″ 64 6 1.10		° ′ ″ 63 10 2.50		° ′ ″ 50 10 2.75		° ′ ″ 62 50 2.70		° ′ ″ 46 28 0.85	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.120	5 35.00	43.230	4 59.06	48.850	6 45.83	46.510	6 0.89	42.495	4 45.48		4 47.08
II Red. to Mer......	.090	1.65	.200	1.55	.790	1.56	.420	1.70	.450	1.56	42.565	1.73
VI Inclination	44.890		.060		.640		.280		.340		.450	0.82
VII Refraction	.880	1 24.2	42.930	1 59.4	.595	1 54.9	.215	1 9.9	.280	1 53.4	.410	1 1.4

Microscopes discordant throughout this zone.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
α Canis Majoris	6 40 7.65	11	+0.36	[+21.25]	55 31 1.9	42.7
24 H. Camelopardalis.	6 44 17.48	8	+0.19	[+21.31]	321 50	....
Piazzi VI. 303	6 53 54.06	11	+0.42	+21.37	64 13 1.1	40.8
29 Canis Majoris	7 13 54.48	11	+0.41	+21.33	63 18 44.8	42.1
Piazzi VII. 116	7 22 31.82	11	+0.33	+21.30	50 17 15.2	40.2
ι Navis.............	8 2 41.00	11	+0.41	+21.27	62 56 43.1	39.3
Bradley 1212	8 29 57.33	10	+0.31	+21.29	46 33 51.9	[44.3]

h		s
7.500....	.......*dt*......................	+21.315
	Hourly rate	−0.0306

Adopted Equator Point..........38° 56′ 41.02″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 43	29.745	50.0	47.4
7 52	29.795	48.3	46.2
8 35	29.795	48.0	46.2

Note.
19, Piazzi VII. 116, ι Navis.
Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0 53°	54°	55°	56°	57°	*D* = Z. D. S. to 1894.0 53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	+0.342	6 30	....	+15.721	+15.576	+15.431	+15.283	......	−3.60	−3.87	−4.14	−4.41
54	0.348	7 0	....	15.630	15.491	15.349	15.205	......	4.15	4.42	4.68	4.94
55	0.354	7 30	+15.712	15.580	15.447	15.311	15.176	−4.50	4.75	5.00	5.25	5.50
56	0.359	8 0	+15.692	+15.569	+15.445	15.320	15.191	−5.16	5.41	5.64	5.87	6.11
57	+0.365	8 30	....	....	....	+15.373	+15.257	......	......	......	−6.53	−6.73

APPARENT RIGHT ASCENSION.	*R* 53°	54°	55°	56°	57°
h m	″	″	″	″	″
6 30	76.81	79.65	82.62	85.76	89.04
7 0	76.93	79.78	82.76	85.90	89.19
7 30	77.07	79.93	82.91	86.06	89.35
8 0	77.18	80.04	83.02	86.18	89.47
8 30	77.18	80.04	83.02	86.18	89.47

1894 MARCH 27. ZONE 31. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	c
1	8.7	7.6	9.7	11.9	14.0	16.2	c	24 11.89	55 38	5.0	0.2	III B	45.815	7 24 52.18	—16 46 8.72	—16 1973
2	8.2	57.1	59.3	1.4	3.7	5.9	c	25 1.49	55 38	“	“	III A	42.780	7 25 41.77	16 51 36.76	16 1978
3	8.9	46.3	48.6	52.8	54.5	57.1	c_4 d_3	25 44.22	56 52	5.0	0.2	IV	44.660	7 26 24.34	18 3 4.56	17 2010
4	8.5	43.3	45.1	47.1	49.2	51.4	a	27 17.09	56 52	“	“	I	42.140	7 27 57.22	18 2 14.62	17 2023
5	9.0	6.5	8.4	10.5	12.4	14.7	a	27 40.37	56 52	“	“	III	42.330	7 28 20.49	18 2 20.26	17 2025
6	8.5	15.5	17.5	19.7	21.8	24.0	c	31 19.71	53 4	5.0	29.7	III	42.710	7 32 0.32	14 14 17.62	14 2022
7	9.2	33.6	35.8	38.0	40.1	42.3	c	32 37.97	54 6	5.0	29.8	....	....	7 33 18.46	15 18 53	15 1945
8	9.8	24.2	26.6	28.4	30.2	32.0	e	32 58.76	54 6	“	“	VII B	44.830	7 33 39.25	15 13 52.25	15 1951
9	8.8	24.5	26.7	28.6	30.4	32.5	e	33 59.01	54 6	“	“	VII A	42.890	7 34 39.49	15 19 41.09	15 1958
10	......	59.7	1.8	4.0	8.1	9.9	c_3 d_2	35 59.68	55 42	5.0	0.2	IV A	39.600	7 36 39.96	—16 54 42.28	-16 2081
11	8.6	58.6	0.8	3.0	5.0	7.3	c	37 2.95	55 42	“	“	V	43.400	7 37 43.23	—16 52 42.84	—16 2089
12	7.7	43.9	46.1	48.3	50.4	52.6	c	37 48.27	55 42	“	“	V B	43.450	7 38 28.56	16 49 31.71	16 2093
13	8.4	6.3	8.0	10.0	12.0	14.2	a	39 39.63	54 42	5.0	0.0	I	44.180	7 40 20.04	15 52 52.29	15 2014
14	9.1	35.9	37.4	39.4	41.3	43.7	a	40 9.08	54 42	“	“	III	49.030	7 40 49.48	15 54 26.67	15 2021
15	9.3	7.1	8.9	10.8	13.1	15.4	c	42 11.07	55 6	5.0	0.6	III B	43.230	7 42 51.43	16 13 26.33	16 2127
16	8.6	51.1	53.0	55.0	57.0	59.1	a	43 24.63	55 6	“	“	I	46.470	7 44 4.98	16 17 39.05	16 2136
17	7.0	56.3	58.1	0.2	2.0	4.2	a	44 29.86	55 44	5.0	29.9	III A	44.900	7 45 10.13	16 58 26.17	16 2146
18	9.0	35.8	38.0	40.0	42.3	44.5	c	44 40.13	55 44	“	“	III	45.340	7 45 20.40	16 55 21.52	16 2148
19	8.9	16.1	18.1	20.0	22.0	24.3	a	45 49.78	55 44	“	“	I B	47.680	7 46 30.06	16 52 52.50	16 2160
20	9.2	54.0	55.8	57.7	59.6	1.9	a	47 27.48	55 44	“	“	I B	38.640	7 48 7.76	—16 50 1.12	—16 2169
21	9.0	47.7	49.5	51.6	53.5	55.8	a	48 21.31	55 44	“	“	I A	43.170	7 49 1.58	—16 57 53.26	-16 2178
22	8.1	56.6	58.5	0.7	3.0	5.1	c	49 0.79	56 40	5.0	1.2	III	47.380	7 49 40.94	17 52 5.89	17 2220
23	8.7	43.9	46.0	48.2	50.4	54.8	c_2 d_1	49 46.09	56 40	“	“	III B	45.840	7 50 26.25	17 48 24.59	17 2229
24	9.1	1.0	3.1	5.3	7.5	9.8	c	51 5.35	56 10	5.0	0.9	III B	47.710	7 51 45.57	17 18 59.00	17 2237
25	9.2	43.8	46.0	47.8	49.8	51.8	e	51 18.00	56 10	“	“	VII A	43.830	7 51 58.21	17 24 13.52	17 2239
26	9.0	11.6	13.4	15.4	17.3	19.5	a	53 45.09	55 24	5.0	0.3	I A	48.750	7 54 25.40	16 39 41.02	16 2225
27	8.1	30.7	32.6	34.4	36.4	38.6	a	54 4.17	55 24	....	....	....	....	7 54 44.49	16 34 28	16 2226
28	9.1	26.8	29.1	31.0	32.7	34.9	e	55 0.97	56 42	5.0	1.2	VII	45.810	7 55 41.12	17 53 41.80	17 2272
29	9.0	45.5	47.8	49.9	52.0	54.4	c	56 49.93	56 10	5.0	1.4	III B	48.200	7 57 30.17	17 19 11.09	17 2292
30	8.8	25.6	27.6	29.7	32.0	34.0	c	57 29.79	56 10	“	“	III	52.830	7 58 10.02	—17 23 51.83	-17 2295
31	9.1	34.5	36.6	38.9	41.1	43.1	c	58 38.85	56 10	“	“	III B	41.130	7 59 19.09	—17 16 57.27	—17 2304
32	7.0	17.0	19.1	21.2	23.5	25.7	c	59 21.31	56 10	“	“	III A	39.750	8 0 1.54	17 22 56.78	17 2311
33	10.0	37.4	39.1	41.1	43.1	45.1	a	1 10.87	55 52	5.0	0.7	III	45.720	8 1 51.14	17 3 36.79	16 2289
34	7.9	22.8	24.9	27.1	29.1	31.2	c	1 27.03	55 52	“	“	III B	46.360	8 2 7.31	17 0 36.75	16 2295
35	7.0	0.0	1.9	4.0	6.4	8.5	c	2 4.17	55 52	“	“	V	49.430	8 2 44.44	17 4 49.45	16 2304
36	8.7	37.0	39.0	41.0	42.9	45.0	a	5 10.83	56 42	5.0	1.3	I	46.060	8 5 51.00	17 53 46.13	17 2372
37	8.6	4.4	6.1	8.1	10.1	12.5	a	5 38.10	56 42	“	“	I A	48.520	8 6 18.27	17 57 46.39	17 2377
38	9.0	45.6	47.5	49.4	51.4	53.8	a	6 19.39	56 42	“	“	III	51.190	8 6 59.56	17 55 26.10	17 2383
39	9.0	1.1	3.1	5.1	7.1	9.1	a	7 34.95	56 42	“	“	I A	43.640	8 8 15.12	17 56 14.30	17 2392
40	8.0	34.9	36.7	38.7	40.8	42.8	a	8 8.62	56 42	“	“	I B	44.950	8 8 48.80	—17 50 13.96	—17 2395
41	8.8	12.6	14.6	16.4	18.4	20.7	a	8 46.38	56 42	“	“	III B	47.840	8 9 26.56	-17 51 11.02	—17 2400
42	9.2	56.4	58.3	0.2	2.2	4.4	a	10 30.14	56 42	“	“	I B	49.420	8 11 10.33	17 51 40.06	17 2412
43	8.2	51.0	53.1	55.2	57.4	59.6	c	10 55.27	56 22	5.0	1.5	V	43.490	8 11 35.49	17 33 2.11	17 2417
44	9.3	20.1	22.1	24.1	26.1	28.2	a	12 53.64	54 36	5.0	1.4	I	42.510	8 13 34.07	15 46 35.33	15 2369
45	8.7	15.9	18.1	20.0	21.9	23.9	e	12 50.00	56 56	5.0	0.4	VII	46.660	8 13 30.16	18 8 5.97	17 2429
46	7.5	1.7	3.8	6.0	8.2	10.6	c	14 6.07	56 56	“	“	V	50.220	8 14 46.23	18 9 12.85	18 2277
47	8.1	26.1	28.0	30.0	32.0	34.0	a	15 59.67	55 30	5.0	1.7	I	44.010	8 16 40.00	16 41 8.05	16 2405
48	9.4	21.9	24.0	26.1	28.5	30.7	c	16 26.25	56 50	5.0	1.6	V	46.380	8 17 6.43	18 2 0.99	17 2462
49	9.0	22.8	24.9	27.1	31.4	32.9	c_3 d_2	17 22.82	55 4	5.0	2.0	V	41.420	8 18 3.20	16 14 21.59	16 2416
50	9.0	20.7	22.9	25.0	27.2	29.3	c	18 25.03	56 44	5.0	1.8	V	43.950	8 19 5.22	—17 55 15.32	-17 2475
51	8.7	54.4	56.4	58.7	0.9	3.1	c	18 58.71	56 44	“	“	V B	37.880	8 19 38.91	-17 50 7.57	17 2477
52	9.0	22.5	24.4	26.3	28.3	30.5	a	20 56.24	56 38	5.0	1.9	I	45.110	8 21 36.46	17 49 34.68	17 2491
53	8.0	2.0	3.8	5.8	7.8	10.0	a	21 35.72	56 38	“	“	I	(48).390	8 22 15.94	17 50 37.40	17 2497
54	8.8	43.1	45.3	47.5	49.6	51.8	c	21 47.47	56 38	“	“	III	45.980	8 22 27.69	17 49 53.41	17 2500
55	8.8	54.0	56.3	58.6	0.6	2.9	c	22 58.49	55 58	5.0	1.3	III (A)	46.170	8 23 38.78	17 13 8.19	17 2509
56	9.5	49.8	52.0	54.2	56.4	58.6	c	24 54.21	55 58	“	“	III B	36.390	8 25 34.52	17 3 37.33	16 2479
57	8.6	1.0	3.4	5.4	7.1	9.1	e	25 35.41	55 58	“	“	VII	39.000	8 26 15.72	17 7 42.69	16 2484
58	9.0	30.8	32.7	34.8	36.6	38.7	a	28 4.44	55 58	“	“	II	40.190	8 28 44.75	17 8 2.47	16 2503
59	8.0	36.3	38.5	40.4	42.2	44.2	e	28 10.86	53 40	5.0	0.4	VII	45.710	8 28 51.42	14 51 44.20	14 2572
60	8.9	33.0	35.5	37.3	39.1	40.9	e	29 7.69	53 40	“	“	VII A	47.640	8 29 48.24	—14 55 34.14	—14 2576
61	9.1	39.6	41.2	43.1	45.2	47.3	a	32 12.96	55 44	5.0	0.8	I B	44.690	8 32 53.31	—16 52 15.50	—16 2527
62	8.8	23.1	25.0	27.0	29.1	31.2	a	32 56.77	55 44	“	“	I	46.590	8 33 37.11	16 56 4.20	16 2532
63	8.9	12.5	14.3	16.1	18.2	20.5	a	33 46.01	55 44	“	“	I	49.540	8 34 26.35	16 57 0.69	16 2537
64	7.5	4.3	6.0	7.9	9.9	12.1	a	34 37.73	55 44	“	“	I	48.440	8 35 18.08	16 56 40.07	16 2541
65	9.5	40.8	42.9	45.0	47.2	49.2	c	34 45.03	55 44	“	“	V B	50.190	8 35 25.38	16 54 4.50	16 2542
66	8.1	34.0	36.2	38.4	40.6	42.6	c	35 38.37	55 44	“	“	V A	45.600	8 36 18.71	16 59 2.85	16 2550
67	8.8	13.2	15.1	16.9	18.8	20.9	a	37 46.66	55 44	“	“	I B	38.400	8 38 27.02	—16 50 17.89	—16 2562

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
68	8.7	40.2	42.2	44.0	46.0	48.2	a	38 13.80	55 44	5.0	0.8	III B	44.320	8 38 54.16	−16 52 12.53	−16 2564
69	9.0	51.6	53.6	55.5	57.5	59.6	a	40 25.33	56 20	5.0	1.2	I B	42.470	8 41 5.63	17 27 38.48	17 2641
70	9.0	55.8	57.8	59.7	1.8	4.0	a	41 29.61	56 20	“	“	I A	44.860	8 42 9.90	−17 34 49.89	−17 2647
71	9.1	43.4	45.5	47.7	52.0	53.4	c_3 d_2	41 43.38	55 30	5.0	1.3	V A	41.815	8 42 23.76	−16 43 52.64	−16 2586
72	7.4	30.0	32.2	34.1	36.0	37.9	e	42 4.31	55 30	“	“	VII	43.130	8 42 44.70	16 41 6.24	16 2589
73	9.2	50.3	52.1	54.1	56.0	58.0	e	42 24.37	55 30	“	“	VII	42.390	8 43 4.76	16 40 52.30	16 2590
74	9.3	56.1	58.2	2.5	4.1	6.8	c_4 d_3	43 53.96	55 30	“	“	(IV)	45.495	8 44 34.36	16 41 49.74	16 2596
75	9.1	54.1	56.2	58.1	59.9	2.0	e	44 28.15	56 44	5.0	1.2	....	....	8 45 8.44	17 50 44	17 2661
76	9.3	57.4	59.5	1.5	3.1	5.4	e	45 31.44	56 44	“	“	VII A	49.460	8 46 11.71	18 0 24.81	17 2667
77	8.8	9.8	11.9	14.3	16.4	18.6	c	47 14.21	56 44	“	“	V A	42.550	8 47 54.49	17 58 12.60	17 2677
78	9.1	4.1	6.5	8.3	10.2	12.1	e	47 38.31	56 44	“	“	VII A	46.870	8 48 18.59	17 59 36.32	17 2679
79	8.9	45.7	48.0	49.9	51.7	53.7	e	49 20.21	54 32	5.0	1.5	VII	45.300	8 50 0.72	15 43 47.44	15 2629
80	8.8	26.9	29.3	31.1	32.9	35.1	e	50 1.47	54 32	“	“	VII A	42.360	8 50 41.98	−15 46 4.60	−15 2635
81	9.0	24.0	26.4	28.5	30.3	32.3	e	50 58.71	54 32	“	“	VII A	44.060	8 51 39.22	−15 46 37.31	−15 2642
82	7.6	48.3	50.1	52.1	54.0	56.2	a	53 21.65	54 32	“	“	I A	39.420	8 54 2.17	15 45 5.27	15 2656
83	8.7	42.1	44.3	46.4	48.7	50.7	c	53 46.45	56 10	5.0	1.9	III	47.040	8 54 26.81	17 22 24.34	17 2706
84	9.5	14.9	17.0	19.1	21.2	23.5	c	54 19.15	56 10	“	“	V B	47.940	8 54 59.52	17 19 30.87	17 2707
85	8.0	13.0	15.1	17.3	21.5	23.1	c_3 d_2	55 13.01	54 34	5.0	1.6	V	45.230	8 55 53.54	15 45 46.92	15 2665
86	8.9	8.3	10.6	12.7	14.4	16.5	e	55 42.91	54 34	“	“	VII	44.650	8 56 23.44	15 45 37.52	15 2668
87	8.5	46.4	48.4	50.6	52.8	55.0	c	57 50.65	56 4	5.0	1.5	III	44.090	8 58 31.04	17 15 29.09	17 2726
88	9.0	50.0	52.2	54.4	56.8	58.8	c	58 54.45	56 4	“	“	V A	40.890	8 59 34.84	17 17 43.18	17 2732
89	9.5	44.2	45.9	47.8	49.7	52.0	a	5 17.48	54 52	5.0	29.7	III	45.390	9 5 58.01	16 3 51.77	15 2725
90	9.2	13.7	16.0	18.1	20.2	22.5	c	8 18.11	56 54	5.0	2.2	V	48.020	9 8 58.47	−18 6 52.20	−17 2792
91	9.3	43.9	45.7	47.6	49.6	51.8	a	10 17.59	56 52	5.0	2.0	I	42.220	9 10 57.96	−18 2 58.76	−17 2801
92	9.1	52.0	53.9	55.8	57.8	0.1	a	11 25.66	56 4	5.0	1.3	I	42.210	9 12 6.11	17 14 56.00	17 2804
93	8.4	30.8	32.8	34.7	36.7	38.9	a	13 4.35	55 0	5.0	1.4	I	47.540	9 13 44.90	16 12 34.71	16 2742
94	8.9	34.5	36.5	38.5	42.9	44.4	c_3 d_2	13 34.35	55 12	5.0	1.2	V	44.520	9 14 14.89	16 23 41.32	16 2748
95	7.9	2.7	4.6	6.6	8.5	10.6	a	13 36.20	55 12	“	“	III	41.620	9 14 16.74	16 22 44.52	16 2749
96	9.3	40.3	42.1	44.0	45.9	48.1	a	17 13.87	56 24	5.0	1.1	I	43.920	9 17 54.31	17 35 31.38	17 2836
97	9.1	53.9	55.8	57.7	59.7	2.0	a	18 27.57	56 8	5.0	1.0	I	43.530	9 19 8.04	17 19 23.41	17 2843
98	9.0	55.6	57.7	59.9	2.0	4.1	c	18 59.87	56 50	5.0	1.0	III	43.270	9 19 40.28	18 1 22.78	17 2846
99	9.1	51.2	53.4	55.6	57.8	59.9	c	19 55.59	55 28	5.0	0.8	III	46.510	9 20 36.13	16 40 20.24	16 2779
100	8.3	5.8	8.0	10.2	14.5	16.1	c_3 d_2	26 5.87	56 46	5.0	1.0	V	47.000	9 26 46.32	−17 58 37.40	−17 2885

1894 MARCH 27. ZONE 32. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

101	9.1	10.7	12.5	14.4	16.5	......	a	42 44.43	56 54	5.0	2.3	(I) A	44.540	9 43 24.97	−18 9 6.25	−17 2969
102	8.0	11.3	13.1	15.0	17.0	19.2	a	45 45.02	57 0	5.0	1.2	I	43.175	9 46 25.57	18 11 27.61	17 2980
103	8.9	19.7	22.4	24.0	28.3	30.4	b_1 c_2	46 32.55	55 46	5.0	1.2	II B	38.500	9 47 13.20	16 52 43.39	16 2904
104	8.1	3.6	5.8	8.0	10.1	12.5	c	47 8.01	55 46	“	“	V	43.625	9 47 48.66	16 57 35.93	16 2909
105	9.0	13.8	15.9	18.0	20.4	22.4	c	48 18.11	55 46	“	“	III A	45.130	9 48 58.76	17 1 16.38	16 2915
106	9.0	2.1	4.4	6.4	8.5	10.7	c	49 6.43	55 46	“	“	V B	39.470	9 49 47.10	16 53 4.94	16 2917
107	7.7	4.8	7.0	9.3	11.4	13.6	c	50 9.23	55 46	“	“	III A	40.250	9 50 49.90	16 59 43.96	16 2921
108	9.1	43.8	45.6	47.6	49.7	51.9	a	51 17.42	55 46	“	“	III A	38.520	9 51 58.09	16 59 11.33	16 2923
109	9.4	27.0	29.1	31.0	33.0	35.3	a	52 0.77	55 46	“	“	III	43.890	9 52 41.45	16 57 40.60	16 2928
110	9.0	9.4	11.2	13.1	15.2	17.3	a	54 42.96	55 58	5.0	1.1	I	43.210	9 55 23.65	−17 9 27.11	−16 2938
111	8.1	51.5	53.7	55.9	58.0	0.1	c	54 55.85	56 10	5.0	1.2	V	41.515	9 55 36.53	−17 20 59.04	−17 3030
112	9.2	34.7	36.5	38.6	40.4	42.6	a	57 8.12	54 54	5.0	1.2	I	42.410	9 57 48.90	16 5 9.15	15 2967
113	7.9	1.0	2.9	4.8	6.8	8.9	a	58 34.68	56 24	5.0	1.3	I	47.945	9 59 15.36	17 36 59.70	17 3046
114	7.7	31.8	34.0	36.1	38.3	40.6	c	58 36.17	56 24	“	“	III	47.970	9 59 16.85	17 37 2.01	17 3047
115	9.2	23.3	25.6	29.9	31.4	34.1	c_4 d_3	59 21.24	56 32	5.0	1.0	VI	42.470	10 0 1.92	17 43 20.17	17 3057
116	8.8	59.6	1.5	3.8	5.9	8.1	c	1 3.79	54 40	5.0	0.9	V	41.980	10 1 44.60	15 51 4.50	15 2979
117	7.4	6.4	8.7	10.6	12.4	14.4	e	1 40.78	55 26	5.0	1.0	VII	48.200	10 2 21.54	16 39 6.92	16 2974
118	9.3	27.1	29.5	31.5	33.3	35.4	e	3 1.38	57 8	5.0	1.0	VII B	40.965	10 3 42.05	18 15 42.65	18 2851
119	8.1	57.7	59.7	1.6	3.6	5.8	a	4 31.60	57 8	“	“	III A	41.910	10 5 12.27	18 22 23.54	18 2853
120	7.8	23.8	25.9	28.0	30.1	32.4	c	5 28.05	55 14	5.0	1.3	III	45.775	10 6 8.85	−16 26 18.09	16 2987
121	10.0	19.8	22.3	24.1	28.3	30.4	b_1 c_2	6 32.56	55 14	“	“	V	47.210	10 7 13.37	−16 26 47.29	−16 2992
122	8.1	24.4	26.7	28.6	30.3	32.4	e	6 58.95	54 12	5.0	1.8	VII	43.890	10 7 39.82	15 23 42.72	15 3003
123	9.3	18.2	20.6	22.5	24.5	26.5	e	7 52.52	56 50	5.0	1.7	VII	42.710	10 8 33.24	18 1 28.77	17 3089
124	9.4	40.8	42.8	44.6	46.5	48.7	a	10 14.53	56 42	5.0	0.6	III A	39.510	10 10 55.27	17 55 37.46	17 3100
125	8.9	43.0	44.8	46.9	48.8	50.9	a	11 16.71	56 42	“	“	I B	38.310	10 11 57.46	17 48 47.59	17 3106
126	9.0	34.7	36.6	38.6	40.5	42.8	a	12 8.50	56 42	“	“	I A	47.240	10 12 49.25	17 58 3.32	17 3112
127	9.0	55.3	57.1	59.0	0.9	3.2	a	13 28.89	56 24	5.0	1.0	I	45.235	10 14 9.67	17 36 11.37	17 3116
128	8.1	22.3	24.0	26.0	27.9	30.1	a	14 55.63	55 0	5.0	0.9	(I)	47.570	10 15 36.50	16 12 51.58	15 3029
129	9.4	32.8	34.8	36.9	38.8	41.0	a	15 6.43	55 0	“	“	III	47.470	10 15 47.30	16 12 51.53	15 3031
130	9.2	2.2	4.4	6.6	10.8	12.5	c_3 d_2	16 2.30	55 0	“	“	V B	45.550	10 16 43.18	−16 9 4.40	−15 3035
131	9.0	57.6	59.4	1.4	3.2	5.5	a	17 30.92	54 28	5.0	0.8	III	44.305	10 18 11.84	−15 39 50.09	−15 3043
132	9.0	16.4	18.4	20.5	22.7	24.9	c	18 20.59	53 34	5.0	0.9	III	43.230	10 19 1.57	14 45 27.18	14 3109
133	neb	12.4	14.5	16.3	18.7	20.0	c	19 16.57	56 56	5.0	1.0	V	44.710	10 19 57.37	−18 8 7.87	−17 3140

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
134	9.2	31.8	34.2	36.0	37.8	39.7	e	20 6.37	54 10	5.0	0.7	VII	48.230	10 20 47.32	−15 23 7.45	−15 3054
135	9.6	25.0	26.9	28.8	30.7	32.7	e	20 59.30	54 10	“	“	VII B	41.430	10 21 40.26	15 17 45.71	15 3059
136	8.0	12.9	15.1	17.3	19.5	21.7	c	22 17.31	54 10	“	“	III A	42.510	10 22 58.27	15 24 29.01	15 3062
137	9.3	5.2	7.8	9.8	11.6	13.5	e	22 39.87	55 22	5.0	0.2	VII	45.810	10 23 20.78	16 34 25.34	16 3064
138	9.4	42.4	44.6	46.7	48.8	50.9	c	23 46.69	55 22	“	“	V A	44.485	10 24 27.60	16 37 11.88	16 3065
139	9.0	31.3	33.1	35.4	37.5	39.6	c	24 35.39	52 54	5.0	1.0	V	45.170	10 25 16.43	14 6 5.09	13 3135
140	9.5	46.9	48.9	51.1	53.3	55.6	c	25 51.17	52 54	“	“	III B	48.345	10 26 32.22	−14 3 51.79	−13 3138
141	8.0	28.6	30.7	32.6	34.4	36.5	e	26 3.17	53 10	5.0	1.2	VII	45.720	10 26 44.21	−14 22 18.15	−14 3134
142	9.0	12.7	14.8	16.8	18.5	20.6	e	29 46.95	55 28	5.0	1.3	VII	46.790	10 30 27.90	16 40 46.18	16 3088
143	9.6	27.0	29.3	31.4	33.6	35.6	c	31 31.39	54 52	5.0	1.6	III	44.440	10 32 12.38	16 3 56.95	15 3090
144	9.0	1.9	4.0	6.2	8.5	10.6	c	32 6.25	56 6	5.0	1.5	V	44.515	10 32 47.19	17 18 4.01	17 3197
145	8.9	47.8	50.0	52.1	53.9	55.8	e	32 22.12	56 6	“	“	VII B	38.330	10 33 3.10	17 12 55.09	16 3097
146	8.2	26.0	28.3	30.2	32.0	34.1	e	33 0.29	56 6	“	“	VII A	46.550	10 33 41.23	17 21 57.23	17 3200
147	9.4	24.1	26.1	28.3	32.6	34.2	c_3 d_2	34 24.07	54 36	5.0	1.2	V	45.480	10 35 5.09	15 48 17.82	15 3101
148	8.8	59.2	1.6	3.5	5.4	7.4	e	34 33.82	54 36	“	“	VII A	43.510	10 35 14.84	15 50 54.67	15 3103
149	9.0	32.0	34.0	35.9	37.7	40.0	a	37 5.65	56 0	5.0	1.0	I	45.220	10 37 46.63	17 12 14.25	16 3111
150	9.4	22.6	24.6	26.6	28.4	30.6	a	37 56.48	57 8	5.0	0.6	I	45.900	10 38 37.41	−18 20 30.97	−18 3008
151	9.5	2.4	4.1	6.4	8.1	10.3	a	38 35.66	53 50	5.0	2.1	III	42.680	10 39 16.74	−15 1 21.74	−14 3171
152	9.5	57.4	58.9	1.0	2.8	5.0	(a)	40 30.42	53 50	“	“	I B	41.725	10 41 11.52	14 57 49.77	14 3174
153	9.1	22.3	24.2	26.2	28.4	30.5	a	40 55.72	53 50	“	“	I A	37.610	10 41 36.82	15 2 56.99	14 3178
154	8.8	0.3	2.3	4.6	6.7	8.8	c	41 4.55	53 50	“	“	V B	44.540	10 41 45.66	14 58 46.73	14 3179
155	8.9	31.5	33.5	35.6	37.8	39.9	c	42 35.67	52 54	5.0	2.0	V A	40.330	10 43 16.82	14 7 49.47	13 3219
156	9.0	2.9	4.5	6.5	8.5	10.7	a	42 35.90	52 54	“	“	III	45.915	10 43 17.05	14 6 21.15	13 3218
157	9.3	4.5	6.8	11.0	12.5	15.4	c_4 d_3	46 2.51	54 6	5.0	28.6	VI	47.620	10 46 43.64	15 18 58.30	15 3145
158	8.0	28.9	31.4	33.1	35.0	36.9	e	47 3.37	55 16	5.0	29.8	V	49.800	10 47 44.46	16 29 43.44	16 3140
159	8.5	53.4	55.6	57.6	59.5	1.5	e	47 27.84	55 16	“	“	VII B	41.925	10 48 8.94	16 24 2.54	16 3143
160	8.0	36.7	38.5	40.4	42.5	44.6	a	50 10.07	54 38	5.0	29.8	I	45.585	10 50 51.20	−15 50 18.19	−15 3162
161	9.3	5.8	7.8	9.7	11.6	13.8	a	53 39.37	55 22	5.0	0.2	I	46.270	10 54 20.50	−16 34 34.21	−16 3162
162	9.4	42.8	44.8	47.1	49.1	51.2	c	54 47.01	56 2	5.0	0.5	V B	42.830	10 55 28.13	17 10 22.24	16 3165
163	9.5	13.5	15.5	17.4	19.3	21.5	a	54 47.18	56 2	“	“	I A	43.970	10 55 28.30	17 17 6.14	17 3277
164	8.9	45.7	47.9	50.0	52.4	54.4	c	55 50.09	55 6	5.0	0.5	V A	48.500	10 56 31.25	16 22 32.68	16 3171
165	8.6	38.5	40.8	42.9	45.0	47.1	c	56 42.87	55 6	“	“	VI B	39.505	10 57 24.04	16 13 16.85	15 3183
166	9.7	35.5	37.3	39.5	41.6	43.7	c	57 39.53	55 6	“	“	V B	44.165	10 58 20.71	16 14 44.96	16 3178
167	8.9	34.5	36.3	38.3	40.3	42.5	a	59 7.98	55 6	“	“	I A	40.990	10 59 49.16	16 20 6.91	16 3181
168	9.1	12.8	15.0	17.1	19.0	21.2	■	59 46.47	54 6	5.0	0.3	III	45.990	11 0 27.69	15 18 27.52	15 3190
169	9.1	25.8	27.6	29.6	31.5	33.8	■	0 59.10	54 6	“	“	I	43.530	11 1 40.33	15 17 39.01	15 3197
170	9.0	38.6	40.4	42.3	44.5	46.5	■	2 11.93	54 18	5.0	0.1	I	42.340	11 2 53.16	−15 29 17.01	−15 3203
171	8.4	3.9	5.8	7.8	9.7	12.0	a	2 37.30	54 18	“	“	I B	39.300	11 3 18.54	−15 25 6.92	−15 3206
172	9.0	49.4	51.4	53.6	58.0	59.6	c_3 d_2	2 49.36	56 18	5.0	0.5	VI A	47.630	11 3 30.54	17 34 21.57	17 3307
173	9.8	13.6	16.0	17.8	19.4	21.7	e	3 47.86	56 18	“	“	VII B	42.220	11 4 29.06	17 26 13.94	17 3311
174	8.8	1.0	3.2	7.4	8.8	11.7	c_4 d_3	4 58.92	53 10	5.0	0.9	VI	44.820	11 5 40.21	14 22 5.74	14 3276
175	8.8	46.9	49.2	51.3	55.5	57.0	c_3 d_2	5 47.02	53 10	“	“	V A	46.600	11 6 28.31	14 25 51.91	14 3277
176	9.6	31.1	33.4	35.3	37.1	39.2	e	6 5.84	53 10	“	“	VII B	40.350	11 6 47.14	14 17 29.00	14 3279
177	9.3	38.3	40.5	42.6	46.9	48.5	c_3 d_2	7 38.34	55 44	5.0	0.2	V B	40.535	11 8 19.59	16 51 38.86	16 3207
178	9.4	26.6	29.0	30.9	32.7	34.6	e	8 0.99	55 44	“	“	V A	46.080	11 8 42.24	16 59 49.88	16 3208
179	9.0	0.3	2.6	4.7	6.6	8.5	e	8 34.79	55 44	“	“	VII (B)	42.825	11 9 16.04	16 52 23.91	16 3211
180	8.7	4.0	6.3	8.2	10.0	12.0	e	9 38.33	55 44	“	“	V	46.800	11 10 19.59	16 56 50.75	−16 3215
181	9.8	53.4	55.6	57.6	59.2	1.3	e	11 27.68	55 36	5.0	0.2	VII	45.780	11 12 8.96	−16 48 32.50	−16 3220
182	9.4	49.2	51.6	53.2	55.3	57.5	e	12 23.62	55 36	“	“	V B	46.030	11 13 4.91	16 45 23.47	16 3222
183	3.4	34.8	36.9	39.0	41.0	43.3	c	13 39.01	53 2	5.0	0.4	V	45.380	11 14 20.36	14 14 15.79	13 3345
184	9.0	28.1	30.2	32.4	36.6	38.2	c_3 d_2	14 28.14	53 2	“	“	VI	42.060	11 15 9.49	14 13 13.43	13 3347
185	9.1	37.0	39.2	41.0	43.0	45.1	e	15 11.68	53 2	“	“	VII A	44.110	11 15 53.04	14 17 6.08	14 3307
186	9.4	31.5	33.7	35.8	37.7	39.6	e	16 6.25	53 18	5.0	0.6	VII	48.175	11 16 47.61	14 31 11.55	14 3308
187	9.0	27.1	29.0	33.2	34.6	37.4	c_4 d_3	17 24.77	52 58	5.0	0.5	VII	40.320	11 18 6.14	14 8 41.09	13 3359
188	9.4	13.3	15.2	17.1	19.0	21.3	a	19 46.67	54 24	5.0	29.0	III	47.820	11 20 28.04	15 37 4.48	15 3263
189	9.5	58.9	0.9	3.0	5.2	7.4	c	20 3.09	54 24	“	“	V	43.550	11 20 44.46	15 35 44.84	15 3264
190	9.0	34.3	36.1	38.1	40.0	42.2	a	22 7.58	54 6	5.0	29.7	I	46.330	11 22 48.97	−15 18 33.91	−15 3270
191	8.0	57.0	58.9	0.8	2.7	4.8	a	22 30.29	54 6	“	“	III A	41.090	11 23 11.68	−15 20 9.10	−15 3272
192	9.5	40.1	42.0	43.9	45.9	48.1	a	26 13.90	57 2	5.0	0.7	I	40.650	11 26 55.29	18 12 56.17	17 3405
193	8.9	22.6	24.4	26.4	28.4	30.6	a	26 56.39	57 2	“	“	III A	49.850	11 27 37.79	18 19 6.36	18 3198
194	9.3	22.0	24.0	26.2	28.4	30.5	c	27 26.23	57 2	“	“	III B	40.970	11 28 7.64	18 9 51.83	17 3409
195	9.5	15.7	17.8	20.0	22.2	24.4	c	28 20.03	57 2	“	“	V	43.030	11 29 1.45	18 13 45.09	17 3413
196	9.6	19.4	21.5	23.9	28.2	29.8	c_3 d_2	29 19.52	56 48	5.0	0.9	V B	36.680	11 30 0.95	17 54 31.08	17 3416
197	9.0	55.0	57.5	59.3	1.2	3.1	e	29 29.28	56 48	“	“	VII(A)	42.290	11 30 10.71	18 2 44.65	17 3417
198	9.0	15.8	17.6	19.6	21.5	23.7	a	32 49.21	54 56	5.0	1.0	I A	49.280	11 33 30.69	16 12 47.11	15 3317
199	8.6	47.5	49.4	51.3	53.2	55.3	a	33 20.89	54 56	“	“	IV B	40.200	11 34 2.37	16 3 31.32	15 3320
200	7.5	1.3	3.3	5.6	7.7	9.8	c	34 5.55	54 56	“	“	V B	41.550	11 34 47.04	−16 3 57.81	−15 3323
201	8.2	52.3	54.1	56.1	58.0	0.1	a	35 25.68	54 56	“	“	I	43.300	11 36 7.18	−16 7 40.14	−15 3330
202	9.4	0.2	2.2	4.3	6.6	8.8	c	36 4.43	53 28	5.0	0.7	III	44.910	11 36 45.94	14 40 7.92	14 3381
203	9.4	29.9	32.0	34.0	36.3	38.4	c	36 34.13	53 28	“	“	III	41.920	11 37 15.64	14 39 11.04	14 3383
204	9.0	39.7	41.9	43.8	45.7	47.7	e	37 14.16	54 38	5.0	29.6	V	46.410	11 37 55.68	−15 50 41.19	−15 3337

Reduction Elements. Zones 31 and 32.

1894.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
March 27.3....	+0.184	+0.064	+0.172	−0.158	+0.037	+0.261
27.5....	+0.131	+0.010	+0.337			
			+0.274			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	29 Canis Majoris		Piazzi VII. 85		Piazzi VII. 116		Lalande 14810		19 Hydrae		Piazzi IX. 13	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	63 10 2.20		47 36 2.30		50 10 2.50		60 54 2.70		47 0 2.35		58 8 2.55	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......		6 37.11	47.350	6 17.04	46.325	5 58.38	43.060	4 55.83	44.110	5 15.90	46.340	5 58.30
II Red. to Mer......		1.56	.270	1.71	.300	1.70	42.980	1.58	.040	1.72	.310	1.62
VI Inclination	48.260	2.04	.120		.150		.870		43.940		.140	
VII Refraction	.260	2 1.3	.080	1 7.4	.120	1 13.7	.830	1 50.2	.875	1 6.0	.090	1 39.0

	α Hydrae		Lalande 18817		44 Hydrae		41 Sextantis		ζ Crateris		γ Corvi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	47 2 2.95		59 28 2.90		62 2 2.05		47 10 4.25		56 36 2.90		55 46 2.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.075	5 34.44	45.925	5 50.29	42.640	4 47.75	45.790	5 48.02		4 53.77		6 29.60
II Red. to Mer......	.025	1.72	.870	1.59	.600	1.57	.755	1.72	42.960	1.65		1.64
VI Inclination	44.915		.720		.425		.590		.770	0.82	47.890	2.04
VII Refraction	.845	1 6.1	.675	1 44.3	.380	1 55.9	.580	1 6.6	.750	1 33.7	.840	1 30.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
29 Canis Majoris.....	7 13 51.27	11	+0.45	+24.42	63 18 44.2	41.3
Piazzi VII. 85	7 16 32.93	11	+0.38	+24.46	47 43 28.4	40.5
Groombridge 1308.	7 19 28.66	13	+0.17	[+24.60]	330 14	....
Piazzi VII. 116	7 22 28.60	11	+0.39	+24.39	50 17 16.3	41.1
Lalande 14810.....	7 29 6.85	11	+0.44	+24.29	61 0 50.3	41.0
19 Hydrae...........	9 3 7.32	11	+0.38	+24.42	47 6 26.0	40.3
Piazzi IX. 13	9 6 43.76	9	+0.42	+24.38	58 15 41.5	40.7
α Hydrae...........	9 21 59.16	11	+0.38	+24.45	47 8 45.2	41.1
d Ursae Majoris.....	9 24 46.95	11	−0.16	[+24.27]	328 38	....
Lalande 18817.....	9 27 55.93	11	+0.43	+24.51	59 35 39.1	41.9
44 Hydrae...........	10 28 34.90	11	+0.44	+24.43	62 8 47.3	40.1
41 Sextantis	10 44 35.65	11	+0.38	+24.50	47 17 0.6	40.9
λ Draconis..........	11 24 47.90	10	−0.16	[+24.46]	329 0	....
ζ Crateris...........	11 39 0.04	11	+0.42	+24.50	56 42 32.8	40.1
γ Corvi.............	12 9 57.94	11	+0.41	+24.53	55 54 6.3	42.4

h		s
7.342............	*dt*	+24.390
	Hourly rate	+ 0.0256

	° ′ ″
Adopted Equator Point..........	38 56 40.95

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 12	30.155	29.7	27.5
8 4	30.175	28.8	27.9
9 3	30.185	27.6	27.1
9 54	30.205	27.8	27.1
10 53	30.225	27.4	26.5
11 40	30.215	26.6	25.7
12 12	30.215	26.0	25.9

Note.

56. Double. Not seen double in zones 161 and 164.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0 52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	+0.396	7 0	......	......	......	+15.632	+15.491	+15.348
53	0.400	7 30	......	+15.845	+15.714	15.581	15.447	15.312
54	0.404	8 0	......	15.817	15.694	15.571	15.445	15.320
55	0.409	8 30	......	15.824	15.711	15.600	15.486	15.371
56	0.413	9 0	......	......	15.768	15.670	15.569	15.467
57	+0.417	9 30	......	......	15.859	15.776	15.691	15.604
		10 0	+16.120	16.054	15.986	15.921	15.851	15.780
		10 30	16.246	16.197	16.148	16.097	16.046	15.993
		11 0	16.401	16.369	16.337	16.306	16.272	16.238
		11 30	+16.581	16.568	16.555	16.541	+16.527	+16.513
		12 0	......	+16.789	+16.795	+16.802	......	......

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894.0						*R*					
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
7 0	.....	.....	.....	− 4.70	4.97	− 5.23	79.80	82.74	85.80	89.04	92.43	96.01
7 30	.....	− 4.83	5.11	5.38	5.64	5.90	79.80	82.74	85.80	89.04	92.43	96.01
8 0	.....	5.61	5.87	6.12	6.37	6.63	79.80	82.74	85.80	89.04	92.43	96.01
8 30	.....	6.40	6.63	6.88	7.11	7.34	79.87	82.81	85.88	89.13	92.51	96.10
9 0	.....	.....	7.45	7.66	7.88	8.09	79.96	82.91	85.98	89.23	92.62	96.20
9 30	.....	.....	8.26	8.46	8.64	8.82	80.00	82.95	86.02	89.27	92.66	96.25
10 0	− 8.74	8.91	9.06	9.22	9.37	9.52	80.04	82.98	86.06	89.31	92.70	96.29
10 30	9.59	9.72	9.85	9.97	10.09	10.21	80.11	83.06	86.14	89.39	92.79	96.38
11 0	10.42	10.51	10.60	10.69	10.77	10.85	80.20	83.16	86.24	89.50	92.90	96.49
11 30	−11.20	11.25	11.30	11.34	11.38	11.43	80.28	83.23	86.32	89.58	92.98	96.58
12 0	.....	11.92	11.93	11.94	.....	.....	80.28	83.23	86.32	89.58	92.98	96.58

1894 MARCH 30. ZONE 33. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	9.0	53.2	55.1	57.1	58.9	1.1	a	31 26.60	54	36	5.0	0.4	I	47.760	7 32 10.16	−15 47 51.92	−15 1930
2	9.2	36.0	37.8	39.9	41.8	44.0	a	32 9.43	54	36	“	“	I A	43.210	7 32 52.98	15 49 38.85	15 1939
3	9.0	7.1	9.1	11.4	13.6	15.8	c	32 11.41	54	36	“	“	III A	46.960	7 32 54.96	15 50 51.93	15 1940
4	8.0	48.4	50.5	52.7	54.7	57.1	c	32 52.69	54	36	“	“	III A	41.510	7 33 36.24	15 49 8.52	15 1950
5	9.3	33.1	34.9	36.8	38.8	41.0	a	34 6.42	54	36	“	“	III B	35.000	7 34 49.99	15 40 39.76	15 1962
6	8.9	15.0	17.0	19.1	21.3	23.5	c	34 19.19	54	36	“	“	V A	37.500	7 35 2.75	15 47 54.39	15 1965
7	9.2	20.6	23.2	24.9	26.8	28.9	e	34 55.11	55	42	5.0	0.6	VII A	45.880	7 35 38.52	16 56 38.67	16 2076
8	9.2	12.1	14.6	16.4	18.3	20.2	e	35 46.66	55	4	5.0	29.8	VII	45.450	7 36 30.16	16 15 15.84	16 2080
9	8.0	28.1	30.6	32.4	34.0	36.0	e	37 2.62	54	36	5.0	29.2	VII A	44.130	7 37 46.17	15 50 2.53	15 1987
10	9.0	59.3	1.7	3.5	5.3	7.5	e	38 33.57	56	30	5.0	1.5	VII A	38.740	7 39 16.88	−17 42 27.29	−17 2120
11	8.6	29.3	31.7	33.7	35.7	37.6	e	39 3.72	56	30	“	“	VII B	43.180	7 39 47.04	−17 37 26.69	−17 2126
12	9.5	53.7	55.7	57.9	0.0	2.1	c	40 57.89	54	20	5.0	29.2	III	43.280	7 41 41.48	15 30 31.50	15 2031
13	9.3	31.1	33.0	35.4	37.3	39.5	c	41 35.27	55	20	5.0	29.4	V	45.700	7 42 18.73	16 31 22.38	16 2122
14	8.7	45.6	47.4	49.5	51.4	53.6	a	44 19.14	55	26	5.0	29.9	I	42.750	7 45 2.59	16 36 24.52	16 2145
15	9.0	54.9	56.7	58.7	0.7	2.9	a	45 28.42	55	26	“	“	I	43.940	7 46 11.87	16 36 47.70	16 2157
16	9.1	5.5	7.3	9.2	11.2	13.5	a	46 38.96	55	26	“	“	I B	38.980	7 47 22.42	16 32 1.55	16 2166
17	9.0	26.2	28.1	30.1	32.0	34.1	a	49 59.77	55	34	5.0	0.4	III A	45.500	7 50 43.19	16 48 34.98	16 2192
18	9.3	15.0	16.7	18.4	20.4	22.5	a	50 48.19	55	6	5.0	0.2	III	45.220	7 51 31.68	16 17 15.48	16 2199
19	9.0	47.0	49.3	51.3	53.6	55.6	c	50 51.37	55	6	“	“	V	49.080	7 51 34.85	16 18 30.60	16 2200
20	8.9	18.5	20.6	22.6	25.0	26.8	c	51 22.71	55	6	“	“	III A	48.940	7 52 6.18	−16 21 39.65	−16 2205
21	8.2	49.8	52.0	54.0	55.8	57.9	e	51 24.24	55	6	“	“	VII B	50.590	7 52 7.73	−16 15 48.57	−16 2206
22	8.2	35.5	37.5	39.6	41.8	44.0	c	53 39.69	55	34	5.0	0.4	III	51.010	7 54 23.12	16 47 8.40	16 2224
23	8.0	21.3	23.0	24.9	27.1	29.4	a	54 54.79	55	34	“	“	I B	40.980	7 55 38.23	16 40 43.93	16 2237
24	8.4	10.4	12.5	14.8	16.8	19.0	c	55 14.71	55	34	“	“	III	45.680	7 55 58.14	16 45 27.63	16 2240
25	9.6	.....	51.6	53.7	55.6	57.6	e	55 23.94	55	6	5.0	0.0	VII	46.020	7 56 7.43	16 17 35.69	16 2242
26	9.5	33.1	34.8	36.6	38.6	40.8	a	58 6.51	55	58	5.0	0.2	I	48.390	7 58 49.89	17 10 19.71	17 2290
27	9.0	23.1	25.2	27.5	29.5	31.6	c	58 27.39	55	2	5.0	0.0	III	49.230	7 59 10.88	16 14 34.89	16 2266
28	9.1	49.5	51.5	53.8	55.9	58.1	c	58 53.77	55	2	“	“	V	44.670	7 59 37.27	16 13 9.91	16 2271
29	9.0	47.9	50.0	52.0	53.9	55.8	e	59 22.34	54	30	5.0	0.1	VII	44.240	8 0 5.90	15 41 1.92	15 2240
30	9.1	23.7	25.7	28.0	30.1	32.3	c	4 27.96	56	54	5.0	1.5	III	43.470	8 5 11.24	−18 4 54.15	−17 2362
31	9.1	9.0	11.3	13.1	15.1	17.1	e	4 43.18	56	54	“	“	VII B	41.760	8 5 26.47	−18 1 12.29	−17 2367
32	8.4	49.4	51.5	53.5	57.8	59.3	c_3 d_2	5 49.25	56	54	“	“	V	38.450	8 6 32.53	18 3 20.81	17 2378
33	9.1	29.7	32.1	34.0	35.9	37.9	e	7 4.41	54	2	5.0	0.7	VII A	38.480	8 7 48.02	15 14 27.51	15 2314
34	9.3	10.4	12.5	14.6	18.9	20.5	c_3 d_2	8 10.40	54	2	“	“	VI A	47.670	8 8 54.01	15 17 22.25	15 2327
35	7.9	35.4	37.4	39.5	41.6	43.9	c	9 39.57	55	44	5.0	0.1	V A	44.400	8 10 22.98	16 58 24.45	16 2363
36	9.4	8.5	10.4	12.4	14.3	16.7	a	18 42.37	57	4	5.0	1.6	I	44.410	8 19 25.66	18 15 16.79	18 2317
37	9.3	33.0	34.4	38.8	40.9	43.3	b_2 c_3	18 43.16	57	4	“	“	III	48.800	8 19 26.45	18 16 42.20	18 2318
38	8.2	37.3	39.6	41.4	43.3	45.1	e	19 11.82	54	2	5.0	29.7	V	48.070	8 19 55.45	15 14 20.29	15 2419
39	9.2	25.6	27.5	29.4	31.3	33.5	a	21 59.04	55	0	5.0	0.0	I	48.470	8 22 42.56	16 12 28.41	16 2453
40	8.3	53.1	55.0	57.0	59.0	1.1	a	23 26.77	56	0	5.0	0.4	I	45.430	8 24 10.19	−17 11 34.25	−17 2512
41	8.3	22.7	24.7	27.0	29.0	31.3	c	23 26.95	56	0	“	“	III	46.110	8 24 10.37	−17 11 49.01	−17 2512
42	9.4	24.1	26.1	28.3	30.4	32.4	c	24 28.27	56	46	5.0	1.1	III	43.060	8 25 11.60	17 56 54.07	17 2520
43	8.1	47.6	49.7	51.9	54.0	56.3	c	24 51.91	56	46	“	“	V A	44.870	8 25 35.24	18 0 43.30	17 2522
44	.....	49.7	51.3	55.7	57.8	59.9	b_2 c_3	25 59.94	56	58	5.0	1.5	III B	43.070	8 26 43.26	18 5 43.36	17 2530
45	.....	2.6	4.2	6.4	10.7	12.4	c_3 d_2	26 2.20	56	58	“	“	VII	44.400	8 26 45.51	18 9 24.09	18 2378
46	9.1	52.1	54.1	56.1	58.0	0.0	e	27 26.08	56	58	“	“	VII A	48.720	8 28 9.39	18 13 59.77	18 2388
47	9.5	33.9	36.5	38.6	41.0	43.0	c	28 38.61	56	58	“	“	V B	43.210	8 29 21.94	18 5 48.63	17 2553
48	9.3	25.6	27.8	29.7	33.9	35.7	c_3 d_2	29 25.53	55	16	5.0	29.7	VI	46.580	8 30 9.04	16 28 0.22	16 2510
49	8.7	48.9	50.6	52.7	54.8	56.8	a	33 22.64	56	54	5.0	0.7	I	44.240	8 34 5.98	18 5 18.44	17 2593
50	7.9	38.9	40.6	42.5	44.5	46.9	a	34 12.53	56	42	5.0	0.0	I	48.870	8 34 55.89	−17 54 45.92	−17 2597

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
51	9.0	17.9	19.7	21.7	23.5	26.0	a	34 51.61	56 42 5.0 0.0	I 44.700	8 35 34.97	−17 53 26.79	−17 2604
52	9.3	47.0	48.6	50.6	52.6	54.7	a	35 20.56	56 42 " "	I A 47.110	8 36 3.92	17 57 26.09	17 2607
53	8.9	23.4	25.5	28.0	29.8	32.1	c	35 27.77	56 42 " "	V B 36.170	8 36 11.15	17 47 35.71	17 2609
54	9.0	23.4	25.7	28.0	30.1	32.3	c	36 27.91	56 42 " "	VI A 49.340	8 37 11.27	17 58 12.88	17 2614
55	9.0	51.4	53.3	55.2	57.1	59.3	a	44 25.10	56 40 5.0 0.1	I 42.290	8 45 8.50	17 50 44.53	17 2661
56	8.8	25.8	27.8	29.7	31.9	34.0	a	44 59.62	56 18 5.0 0.3	III 47.160	8 45 43.05	17 30 18.26	17 2665
57	9.3	39.2	41.1	43.5	45.6	47.9	c	45 43.47	56 48 5.0 1.2	III 41.930	8 46 26.85	17 58 40.95	17 2670
58	8.9	37.4	39.3	41.1	43.1	45.3	a	47 11.10	56 48 " "	I 40.500	8 47 54.49	17 58 12.43	17 2677
59	9.1	18.6	20.5	22.4	24.4	26.6	a	47 52.28	56 16 5.0 0.9	III A 39.260	8 48 35.72	17 29 2.22	17 2681
60	8.9	32.0	34.0	36.1	38.3	40.4	c	48 36.17	54 32 5.0 29.5	III 45.550	8 49 19.79	−15 43 43.37	−15 2627
61	7.7	19.5	21.4	23.4	25.4	27.8	a	49 53.34	56 40 5.0 0.5	I 44.830	8 50 36.75	−17 51 35.10	−17 2691
62	8.1	51.5	53.7	55.9	58.1	0.4	c	49 55.93	56 40 " "	III 47.695	8 50 39.34	17 52 31.50	17 2692
63	9.0	37.0	38.9	41.2	43.6	45.7	c	50 41.29	55 12 5.0 0.2	V 45.090	8 51 24.85	16 23 39.26	16 2634
64	7.0	7.9	9.9	12.0	14.2	16.4	c	51 12.09	55 12 " "	V B 41.975	8 51 55.66	16 19 27.74	16 2639
65	9.0	8.0	9.7	11.7	13.7	16.0	a	52 41.43	55 12 " "	I A 43.670	8 53 24.99	16 26 22.71	16 2649
66	7.9	50.6	52.4	54.2	56.3	58.5	a	53 24.00	55 12 " "	III B 48.910	8 54 7.57	16 21 39.00	16 2653
67	8.9	47.1	49.1	50.9	52.9	55.1	a	54 20.61	55 12 " "	I B 41.685	8 55 4.18	16 19 20.05	16 2659
68	9.2	5.3	7.5	9.6	11.8	14.1	c	55 9.67	56 42 5.0 0.0	III B 44.570	8 55 53.10	17 50 21.42	17 2711
69	9.0	27.6	29.7	32.0	36.4	37.9	$c_3 d_2$	55 27.67	56 42 " "	V A 46.200	8 56 11.09	17 57 19.52	17 2712
70	9.3	22.8	25.0	27.1	29.3	31.6	c	56 27.17	56 54 5.0 0.0	V 47.230	8 57 10.58	−18 6 27.11	−17 2717
71	9.4	12.3	14.7	16.5	18.3	20.4	e	56 46.49	56 54 " "	V B 46.490	8 57 29.90	−18 3 0.74	−17 2720
72	8.8	13.2	15.7	17.6	19.3	21.4	e	57 47.63	56 4 5.0 0.0	V 44.275	8 58 31.12	17 15 28.76	17 2726
73	8.0	0.6	2.4	4.5	6.4	8.6	a	1 34.33	56 34 5.0 0.2	I A 42.040	9 2 17.78	17 47 58.95	17 2751
74	9.3	10.8	12.7	14.7	16.6	19.0	a	2 44.57	56 34 " "	I B 40.560	9 3 28.04	17 41 5.66	17 2755
75	9.4	25.9	28.1	29.9	31.9	34.1	a	3 59.89	57 6 5.0 0.1	III A 37.750	9 4 43.30	18 18 41.49	18 2587
76	8.5	28.2	30.2	32.5	34.5	36.8	c	4 32.45	57 6 " "	III B 45.100	9 5 15.88	18 14 36.12	18 2596
77	8.7	41.1	43.1	45.0	47.0	49.1	a	13 14.73	55 36 5.0 28.7	I 43.385	9 13 58.32	16 47 11.55	16 2744
78	8.4	12.8	14.7	16.7	18.6	20.8	a	13 46.38	55 36 " "	I B 49.350	9 14 29.97	16 45 52.99	16 2751
79	7.9	1.5	3.4	5.3	7.3	9.5	a	19 35.07	55 36 5.0 29.2	I 43.550	9 20 18.68	16 47 16.96	16 2778
80	9.4	45.4	47.3	49.2	51.1	53.5	a	20 19.04	56 4 5.0 0.2	I 42.945	9 21 2.62	−17 15 7.60	−17 2854
81	9.1	38.2	40.4	42.6	44.7	47.1	c	23 42.61	56 10 5.0 29.4	V 44.820	9 24 26.20	−17 21 47.69	−17 2870
82	9.2	17.6	20.0	21.9	23.8	25.8	e	23 51.98	56 10 " "	VII A 39.700	9 24 35.57	17 23 24.58	17 2873
83	9.3	49.2	51.7	53.6	55.4	57.4	e	26 23.56	56 34 5.0 0.1	VII 44.810	9 27 7.13	17 45 51.34	17 2886
84	9.6	16.0	18.1	20.1	22.0	24.0	[illegible]	27 50.13	56 34 " "	V A 46.550	9 28 33.70	17 49 36.48	17 2895
85	8.0	5.6	7.7	9.8	11.8	14.1	c	29 9.81	(54)44 5.0 29.1	V 45.160	9 29 53.54	15 55 51.41	15 2837
86	9.2	47.4	49.5	51.7	53.7	55.9	c	29 51.65	(54)44 " "	VI B 36.205	9 30 35.39	15 49 49.46	15 2839
87	8.7	24.7	26.6	28.4	30.5	32.6	a	31 58.42	56 48 5.0 0.5	III 43.210	9 32 42.00	17 59 20.45	17 2910
88	9.1	35.5	37.4	39.7	41.8	44.0	c	32 39.69	56 58 5.0 0.6	III 47.280	9 33 23.26	18 10 38.70	17 2916
89	9.3	54.9	57.1	59.1	3.7	5.1	$c_3 d_2$	32 54.92	56 58 " "	V A 44.430	9 33 38.49	−18 12 59.18	−18 2742

1894 MARCH 30. ZONE 34. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

90	8.7	43.8	45.9	47.7	49.6	51.8	a	47 17.60	56 40 5.0 0.0	III 44.960	9 48 1.27	−17 51 57.37	−17 2992
91	8.6	20.6	22.8	25.1	27.1	29.4	c	47 25.01	56 40 " "	V B 42.540	9 48 8.69	17 48 0.54	17 2993
92	8.0	6.9	9.1	10.8	12.7	15.0	a	48 40.75	56 40 " "	III B 41.460	9 49 24.43	17 47 38.76	17 2997
93	7.4	56.1	57.9	59.9	1.8	3.9	a	49 29.43	54 32 5.0 29.6	III 43.230	9 50 13.26	15 43 18.35	15 2929
94	9.1	2.7	4.5	6.5	8.4	10.7	[illegible]	50 36.11	54 48 5.0 29.5	I 44.850	9 51 19.93	15 59 48.38	15 2932
95	7.7	35.3	37.1	39.0	41.1	43.1	a	52 8.67	54 48 " "	I A 43.800	9 52 52.50	16 2 42.03	15 2942
96	8.6	12.5	14.1	16.2	18.1	20.3	a	54 45.79	54 50 5.0 29.2	I 43.620	9 55 29.63	16 1 25.95	15 2954
97	8.5	10.5	12.5	14.4	16.3	18.5	a	57 44.31	56 48 5.0 0.0	I 47.090	9 58 28.03	18 0 39.15	17 3042
98	9.1	53.4	55.4	57.4	59.4	1.6	a	58 27.31	56 48 " "	I 47.040	9 59 11.04	18 0 38.39	17 3045
99	9.2	22.5	24.6	26.9	29.0	31.1	c	58 26.83	55 36 5.0 29.5	V 43.600	9 59 10.64	−16 47 32.38	−16 2954
100	8.9	5.0	6.6	8.7	10.7	12.9	a	1 38.47	55 42 5.0 29.8	I 45.340	10 2 22.29	−16 54 3.25	−16 2975
101	8.8	17.1	18.9	20.8	22.8	24.9	a	2 50.75	56 44 5.0 0.1	I 44.410	10 3 34.51	17 55 49.22	17 3068
102	8.9	35.0	36.8	38.8	40.8	43.0	a	3 8.75	56 44 " "	III A 50.000	10 3 52.51	18 0 50.67	17 3070
103	9.4	26.7	28.6	30.6	32.5	34.7	a	5 0.21	55 4 5.0 29.8	III 50.140	10 5 44.08	16 17 35.37	16 2986
104	9.0	7.6	9.5	11.6	13.4	15.7	a	5 41.34	56 18 5.0 0.2	III 44.810	10 6 25.14	17 29 57.99	17 3082
105	9.4	38.4	40.5	42.7	45.0	47.0	c	6 42.73	54 24 5.0 29.7	III (43).860	10 7 26.66	15 35 34.23	15 3001^1
106	8.0	10.0	11.7	13.6	15.9	18.0	a	6 43.33	54 24 " "	I (43).950	10 7 27.26	15 35 34.09	15 3001^2
107	9.3	4.0	6.3	8.5	10.6	12.8	c	8 8.45	56 54 5.0 0.0	III 46.290	10 8 52.23	18 6 28.56	17 3091
108	9.0	2.8	4.6	6.7	8.7	10.8	a	10 36.62	57 0 5.0 0.4	I 47.995	10 11 20.41	18 13 0.25	17 3103
109	9.1	0.0	2.0	4.1	6.5	8.6	c	11 4.25	54 10 5.0 29.0	III 45.840	10 11 48.21	−15 22 11.85	−15 3020
110	9.1	42.3	44.5	46.7	48.9	51.1	c	11 46.70	56 2 5.0 29.8	V 43.340	10 12 30.56	−17 13 31.97	−17 3110
111	8.5	28.4	30.3	32.3	34.1	36.4	a	15 1.83	54 40 5.0 29.2	I 41.505	10 15 45.79	15 50 49.89	15 3030
112	8.8	3.6	5.3	7.5	9.4	11.6	a	15 37.19	55 52 5.0 29.4	III A 39.230	10 16 21.08	17 5 25.34	16 3028
113	9.5	15.9	17.8	19.8	21.6	23.7	a	16 49.46	55 52 " "	I B 40.970	10 17 33.36	16 59 31.50	16 3035
114	9.3	50.1	52.2	54.6	56.8	58.9	c	16 54.53	55 52 " "	V A 37.650	10 17 38.43	17 4 57.03	16 3036
115	9.4	58.1	59.9	1.8	3.9	6.0	a	18 31.47	54 38 5.0 28.6	I 45.230	10 19 15.44	15 50 1.12	15 3046
116	9.6	50.3	52.1	54.2	56.0	58.2	a	19 23.72	54 52 5.0 29.4	III 45.230	10 20 7.69	16 4 4.19	15 3051
117	8.4	50.4	52.1	54.1	56.1	58.3	a	20 23.76	54 52 " "	I A 47.180	10 21 7.73	16 7 52.92	15 3055
118	8.9	51.7	53.6	56.0	58.3	0.2	c	20 55.97	56 0 5.0 29.7	V 41.780	10 21 39.89	17 11 4.03	16 3056
119	8.8	23.6	25.8	27.7	29.4	31.6	e	20 57.81	56 0 " "	VII A 47.770	10 21 41.72	−17 16 12.39	−17 3147

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″ ″		r	h m s	° ′ ″	°
120	8.0	4.1	6.3	8.1	9.9	11.9	e	22 38.47	54 32	5.0 29.3	V (A)	43.940	10 23 22.47	−15 46 53.87	−15 306
121	9.0	45.6	48.0	49.9	51.7	53.6	e	23 20.18	54 32	" "	VII B	36.620	10 24 4.20	15 38 10.65	15 306
122	8.8	39.4	41.4	43.6	46.0	48.1	c	24 43.71	56 8	5.0 29.6	V A	37.700	10 25 27.66	17 21 0.48	17 316
123	9.3	53.9	55.6	57.6	59.6	1.8	a	26 27.46	56 8	" "	I A	36.930	10 27 11.42	17 20 42.91	17 317
124	8.0	31.8	33.5	35.4	37.4	39.7	a	27 5.17	55 14	5.0 29.5	III	46.470	10 27 49.18	16 26 30.44	16 307
125	8.2	4.5	6.5	8.8	11.0	13.1	c	30 8.79	55 40	5.0 29.5	V	42.600	10 30 52.80	16 51 20.28	16 309
126	9.4	1.2	3.3	5.3	7.1	9.1	e	30 35.76	53 32	... ...	....	....	10 31 19.87	14 43 20	14 314
127	7.8	38.0	40.4	42.2	44.0	46.1	e	31 12.68	53 42	5.0 29.6	VII	43.780	10 31 56.78	14 53 38.68	14 315
128	9.4	40.3	42.1	44.1	46.1	48.3	a	35 13.62	54 2	5.0 29.3	I	49.390	10 35 57.73	15 15 22.03	15 310
129	8.6	29.1	31.1	32.9	35.0	37.0	a	36 2.45	54 2	" "	III B	40.510	10 36 46.57	−15 9 22.62	−14 316
130	8.0	25.6	27.6	29.9	32.0	34.2	c	36 29.87	54 24	5.0 29.3	III	38.980	10 37 13.97	−15 34 6.94	−15 311
131	9.5	9.4	11.3	13.5	15.1	17.3	a	37 42.81	54 24	" "	III A	43.000	10 38 26.92	15 38 36.77	15 311
132	9.1	56.8	58.7	0.5	2.5	4.7	a	38 30.00	53 28	5.0 29.5	III	43.060	10 39 14.15	14 39 22.42	14 317
133	9.6	9.1	10.9	12.7	14.7	16.9	a	39 42.36	54 28	5.0 29.2	I	42.215	10 40 26.48	15 39 7.37	15 3121
134	8.8	4.4	6.6	8.7	10.5	12.6	e	39 38.80	55 38	5.0 29.4	VII A	46.605	10 40 22.87	16 53 52.30	16 3121
135	6.0	40.2	42.3	44.3	46.2	48.2	a	41 13.90	55 38	" "	III B	42.720	10 41 57.98	16 46 10.30	16 312
136	9.0	27.8	30.1	32.2	34.3	36.5	c	41 32.19	55 38	" "	V A	46.520	10 42 16.27	16 53 49.66	16 3127
137	9.5	19.4	21.7	23.8	25.9	28.0	c	42 23.77	55 38	" "	III	42.800	10 43 7.86	16 49 24.34	16 3129
138	9.5	47.0	49.0	51.1	53.3	55.4	c	42 51.17	55 38	" "	V B	37.370	10 43 35.27	16 44 30.27	16 313
139	9.6	57.8	59.6	1.6	3.6	5.8	a	44 31.35	55 38	" "	I	38.040	10 45 15.46	−16 47 52.23	−16 3134
140	9.4	48.8	50.7	52.5	54.6	56.7	a	45 22.20	54 42	5.0 29.3	III A	50.720	10 46 6.34	−15 59 5.79	−15 3142
141	8.5	25.0	26.7	28.6	30.6	32.9	a	45 58.29	54 42	" "	III B	49.770	10 46 42.44	15 52 22.37	15 3144
142	8.7	46.7	48.3	50.3	52.3	54.5	a	47 19.95	54 42	" "	I B	45.940	10 48 4.11	15 51 7.91	15 3153
143	8.8	26.9	28.9	30.9	32.7	34.9	a	48 0.45	55 4	5.0 29.5	I	47.270	10 48 44.60	16 16 46.76	16 3144
144	9.5	6.2	7.9	9.8	11.9	14.1	a	48 39.56	55 4	" "	III B	49.860	10 49 23.72	16 14 25.66	16 3145
145	8.6	56.8	58.7	0.7	2.6	4.8	a	49 30.30	55 4	" "	I	44.150	10 50 14.46	16 15 47.57	16 3149
146	8.6	41.9	43.9	46.1	48.2	50.3	c	49 46.09	53 56	5.0 29.3	III B	49.640	10 50 30.29	15 6 18.22	14 3223
147	8.4	16.5	18.3	20.3	22.2	24.5	a	50 49.76	53 56	" "	IV B	36.490	10 51 33.97	15 2 8.85	14 3229
148	8.6	32.0	34.1	36.2	38.3	40.5	c	51 36.23	53 56	" "	V A	47.270	10 52 20.44	15 12 0.28	14 3232
149	4.0	36.4	38.3	40.1	42.1	44.4	a	54 10.08	56 34	5.0 29.8	I	44.410	10 54 54.23	−17 45 58.01	−17 3273
150	9.6	15.7	17.7	19.7	21.6	24.0	a	54 49.57	56 34	" "	I	48.680	10 55 33.72	−17 47 19.37	−17 3279
151	8.7	49.9	52.0	54.1	56.3	58.5	c	54 54.17	56 34	" "	III	48.480	10 55 38.32	17 47 17.42	17 3281
152	9.3	30.3	32.3	34.4	36.5	38.3	e	55 4.45	56 34	" "	V A	46.210	10 55 48.60	17 49 48.86	17 3282
153	8.6	58.8	1.0	3.2	5.4	7.5	c	59 3.19	54 30	5.0 28.8	V	46.500	10 59 47.43	15 42 34.96	15 3189
154	8.8	34.5	36.4	38.4	40.1	42.4	a	0 7.87	54 30	" "	III A	41.110	11 0 52.12	15 44 3.97	15 3192
155	9.4	6.9	8.6	10.5	12.4	14.5	a	1 40.08	54 30	" "	I	42.340	11 2 24.34	15 41 12.60	15 3201
156	8.7	39.4	41.3	43.6	45.7	47.9	c	1 43.59	56 4	5.0 29.3	V	43.100	11 2 27.81	17 15 35.60	17 3304
157	9.5	29.3	31.1	33.1	35.0	37.3	a	3 2.91	56 4	" "	III A	42.370	11 3 47.14	17 18 33.35	17 3309
158	9.1	25.1	27.1	29.4	31.6	33.6	c	3 29.37	57 6	5.0 0.2	V	46.730	11 4 13.58	18 18 48.74	18 3113
159	9.7	39.6	41.6	43.9	46.1	48.3	c	4 43.91	56 50	5.0 0.5	V B	36.220	11 5 28.14	−17 56 15.63	−17 3315
160	8.9	50.4	52.6	54.8	57.1	59.1	c	5 54.81	56 50	" "	III A	48.640	11 6 39.04	−18 6 36.11	−17 3318
161	7.0	44.2	46.1	48.4	50.6	52.7	c	6 48.41	56 50	" "	III B	39.700	11 7 32.66	17 57 20.54	17 3321
162	8.5	19.4	21.6	23.7	26.0	28.2	c	7 23.79	55 30	5.0 29.4	V A	36.640	11 8 8.07	16 42 44.50	16 3206
163	9.0	24.1	26.0	27.9	29.9	32.1	a	8 57.64	55 30	" "	I B	42.290	11 9 41.94	16 38 2.89	16 3214
164	9.5	22.7	24.5	26.4	28.2	30.4	a	9 55.96	54 36	5.0 29.3	I	45.580	11 10 40.28	15 48 15.68	15 3226
165	9.0	52.8	55.0	57.1	59.4	1.5	c	9 57.17	54 36	" "	III	46.060	11 10 41.49	15 48 26.66	15 3227
166	9.6	53.1	54.7	56.7	58.8	0.9	a	11 26.35	54 36	" "	I B	45.030	11 12 10.68	15 44 53.11	15 3231
167	8.9	51.0	53.0	55.0	56.9	59.0	a	12 24.68	55 50	5.0 29.4	I	43.870	11 13 8.99	17 1 47.19	16 3223
168	9.5	16.6	18.1	20.0	22.1	24.3	a	12 49.93	55 50	" "	III A	46.390	11 13 34.25	17 5 50.16	16 3225
169	9.6	18.4	20.0	22.1	24.0	26.2	a	13 51.83	55 44	5.0 29.6	III	49.150	11 14 36.16	−16 57 29.46	−16 3229
170	9.1	7.9	9.9	11.9	13.8	16.0	a	14 41.59	55 44	" "	I	43.320	11 15 25.92	−16 55 36.72	−16 3232
171	9.0	38.3	40.3	42.7	44.8	47.1	c	14 42.65	57 10	5.0 1.8	V	44.850	11 15 26.96	18 22 15.11	18 3156
172	9.3	50.1	52.2	54.4	56.5	58.7	c	15 54.39	57 10	" "	III A	43.430	11 16 38.71	18 24 59.68	18 3159
173	9.2	49.8	51.9	54.2	56.4	58.5	c	16 54.17	56 50	5.0 1.5	V	46.980	11 17 38.50	18 2 54.53	17 3364
174	9.0	27.8	29.8	31.9	33.8	35.8	e	17 1.89	56 50	" "	VII B	41.130	11 17 46.22	17 57 52.13	17 3366
175	8.0	57.1	59.0	0.8	2.8	4.9	a	19 30.80	56 52	5.0 29.7	I	42.570	11 20 15.16	18 3 25.54	17 3372
176	9.4	7.8	9.7	11.7	13.7	16.0	a	20 41.62	56 36	5.0 0.1	I A	46.630	11 21 25.99	17 51 56.49	17 3380
177	9.0	54.3	56.4	58.4	0.3	2.6	a	21 28.21	56 36	" "	I B	38.850	11 22 12.59	17 43 2.90	17 3385
178	8.0	5.0	7.4	9.3	11.0	13.1	e	21 39.23	56 50	5.0 0.7	V (B)	42.080	11 22 23.61	17 58 8.82	17 3386
179	9.0	25.5	27.9	30.0	32.2	34.4	c	22 30.01	56 50	" "	V A	44.980	11 23 14.39	−18 5 29.51	−17 3389
180	9.5	54.1	56.0	58.1	0.1	2.5	c	25 58.17	55 52	5.0 0.7	III B	(42).380	11 26 42.61	−17 0 10.11	16 3270
181	9.6	19.8	22.1	24.2	26.4	28.6	c	26 24.23	55 52	" "	V (A)	40.360	11 27 8.67	17 5 58.67	16 3274
182	8.0	43.3	45.1	47.0	49.0	51.1	a	28 16.57	54 18	5.0 0.6	I	43.400	11 29 1.04	15 29 35.34	15 3297
183	9.5	31.7	33.6	35.4	37.4	39.8	a	29 5.04	54 18	" "	I B	37.910	11 29 49.52	15 24 38.61	15 3302
184	8.9	1.2	3.1	5.0	6.9	9.2	a	29 34.56	54 18	" "	I A	43.870	11 30 19.04	15 32 57.57	15 3303
185	9.4	23.8	25.5	27.5	29.4	31.7	a	32 57.27	55 46	5.0 29.7	III B	42.670	11 33 41.77	16 54 15.19	16 3297
186	9.2	14.6	16.7	18.6	20.5	22.6	a	33 48.30	55 46	" "	I A	43.770	11 34 32.80	17 0 59.91	16 3299
187	8.0	47.8	49.7	51.7	53.6	55.8	a	35 21.44	56 0	5.0 29.5	I B	45.050	11 36 5.96	17 8 59.49	16 3304
188	9.8	7.6	9.7	11.6	13.6	15.8	a	35 41.40	56 0	" "	III A	46.340	11 36 25.92	17 15 51.28	17 3442
189	9.7	59.3	1.4	3.6	5.7	7.8	c	41 3.57	55 48	5.0 29.9	III	42.240	11 41 48.14	−16 59 19.85	−16 3324
190	9.0	3.0	5.2	7.2	9.4	11.6	c	42 7.29	55 48	" "	III	38.730	11 42 51.86	−16 58 13.07	−16 3327
191	9.0	11.0	13.1	15.6	17.6	19.9	c	43 15.45	56 42	5.0 29 7	III A	44.120	11 44 0.04	17 57 11.68	17 3481
192	9.0	37.9	40.0	42.0	44.3	46.6	c	43 42.17	56 42	" "	V (B)	40.690	11 44 26.76	−17 49 42.48	−17 3482

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″ ″	r	h m s	° ′ ″	°
193	8.8	14.2	16.5	18.3	20.2	22.3	e	43 48.52	55 54	5.0 28.9	VII B 46.560	11 44 33.11	−17 3 32.57	−16 3333
194	8.2	6.1	8.2	10.4	12.2	14.0	e	44 40.38	55 54	" "	V A 50.190	11 45 24.98	17 11 5.74	16 3337
195	8.9	14.1	16.4	18.3	20.2	22.2	e	45 48.46	55 54	" "	VII B 37.890	11 46 33.07	17 0 47.55	16 3341
196	9.4	2.9	5.2	7.1	9.1	11.0	e	46 37.26	55 54	" "	VII A 44.470	11 47 21.88	17 9 18.19	16 3344
197	9.0	40.9	43.3	45.2	47.0	49.0	e	47 15.30	55 54	" "	VII B 39.420	11 47 59.92	17 1 16.68	16 3347
198	9.3	41.6	43.4	45.4	47.5	49.5	a	49 15.19	55 52	5.0 29.1	III A 37.960	11 49 59.83	−17 5 11.47	−16 3354

Reduction Elements. Zones 33 and 34.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 30.3....	+0.273	+0.009	+0.325	+0.247	−0.004	+0.268
30.5....	+0.221	−0.016	+0.259			
			+0.221			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi VII. 116		Lalande 14810		ι Navis		Lalande 16304		Piazzi IX. 13		θ Pyxidis Nautilis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	50 10 3.10		60 54 3.20		62 50 2.60		51 6 2.40		58 8 2.60		64 20 1.95	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.495	6 1.42		5 0.19	42.615	4 47.15	46.110	5 54.11	46.655	6 4.25	45.300	5 38.44
II Red. to Mer......	.470	1.70	43.290	1.61	.550	1.56	.070	1.69	.635	1.62	.250	1.55
VI Inclination	.320		.115	0.82	.390		45.940		.440		.110	
VII Refraction.......	.250	1 9.9	.090	1 44.5	.360	1 53.6	.880	1 12.5	.400	1 34.4	.040	2 2.0

	α Hydrae		κ Hydrae		44 Hydrae		φ Hydrae		θ Crateris		ζ Crateris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	47 2 2.05		52 40 2.15		62 2 1.90		55 10 2.35		48 2 2.95		56 36 2.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.330	5 39.38	48.270	6 34.94	42.975	4 54.11		4 55.77	48.490	6 39.19	43.270	5 0.10
II Red. to Mer......	.290	1.72	.195	1.67	.920	1.57		1.65	.440	1.71	.240	1.63
VI Inclination	.170		.070		.750		42.945	2.04	.295		.075	
VII Refraction.......	.110	1 3.2	.050	1 17.1	.735	1 50.9	.920	1 24.7	.255	1 6.0	.055	1 29.8

	η Crateris	
	° ′ ″	
CIRCLE READING.	55 24 2.00	
	r	′ ″
I Microm. Eq......	43.390	5 1.73
II Red. to Mer......	.320	1.65
VI Inclination	.170	
VII Refraction.......	.105	1 25.9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi VII. 116.....	7 22 25.46	11	+0.46	+27.42	50 17 16.1	40.8
λ Ursae Minoris S. P.	7 28 5.30	3	−1.84	[+29.88]	307 54	....
Lalande 14810.....	7 29 3.53	11	+0.52	+27.48	61 0 50.3	40.9
Groombridge 1374.	7 47 6.21	11	+0.33	[+27.10]	324 44	....
ι Navis............	8 2 34.65	11	+0.53	+27.37	62 56 44.9	40.5
Lalande 16304.....	8 12 55.14	11	+0.46	+27.41	51 13 10.7	40.8
Piazzi IX. 13	9 6 40.69	11	+0.50	+27.34	58 15 42.9	41.8
θ Pyxidis Nautilis...	9 16 21.14	11	+0.54	+27.42	64 27 43.9	41.5
α Hydrae...........	9 21 56.03	11	+0.44	+27.49	47 8 46.4	42.2
d Ursae Majoris.....	9 24 43.51	8	+0.31	[+27.44]	328 38	....
κ Hydrae...........	9 34 46.87	11	+0.47	+27.39	52 47 55.9	42.1
44 Hydrae...........	10 28 31.75	11	+0.52	+27.49	62 8 48.5	40.8
φ Hydrae...........	10 32 58.56	11	+0.48	+27.43	55 16 26.5	41.3
λ Draconis..........	11 24 44.61	8	+0.31	[+27.56]	329 0	....
θ Crateris..........	11 30 51.98	11	+0.45	+27.49	48 9 49.8	40.8
ζ Crateris..........	11 38 57.03	11	+0.49	+27.45	56 42 34.3	41.2
η Crateris..........	11 50 10.49	11	+0.49	+27.43	55 30 31.3	40.6

h		s
7.778	............*dt*......................	+27.420
	Hourly rate...........	+ 0.0096

Adopted Equator Point............38° 56′ 41.″18

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 20	29.865	47.0	48.4
8 15	29.875	44.8	46.6
9 10	29.875	44.7	44.5
10 10	29.875	42.8	43.0
11 0	29.875	42.2	41.3
11 50	29.865	41.2	39.6

Note.

8. Close double.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					D = Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	+0.474	7 30	......	+15.755	+15.623	+15.489	+15.356	.....	−5.18	−5.46	−5.73	−5.99
54	0.479	8 0	......	15.732	15.611	15.486	15.360	.....	5.98	6.25	6.51	6.76
55	0.483	8 30	......	15.746	15.634	15.523	15.407	.....	6.82	7.07	7.31	7.55
56	0.488	9 0	......	15.796	15.698	15.599	15.497	.....	7.68	7.91	8.13	8.35
57	+0.494	9 30	......	15.881	15.798	15.714	15.627	.....	8.55	8.75	8.95	9.13
		10 0	......	16.002	15.936	15.867	15.796	.....	9.39	9.55	9.73	9.89
		10 30	+16.205	16.155	16.105	16.053	16.002	−10.06	10.20	10.33	10.47	10.61
		11 0	+16.368	16.336	16.303	16.272	16.238	−10.87	10.98	11.08	11.18	11.28
		11 30	......	+16.543	16.531	16.517	16.502	.....	−11.69	11.76	11.82	11.88
		12 0	......	......	+16.781	+16.787	+16.792	.....	.....	−12.38	−12.40	−12.42

APPARENT RIGHT ASCENSION.	R				
	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″
7 30	78.51	81.41	84.49	87.70	91.10
8 0	78.69	81.60	84.68	87.90	91.31
8 30	78.87	81.79	84.88	88.10	91.52
9 0	79.05	81.98	85.07	88.31	91.73
9 30	79.18	82.11	85.21	88.45	91.88
10 0	79.30	82.24	85.35	88.59	92.02
10 30	79.45	82.39	85.51	88.76	92.19
11 0	79.62	82.57	85.68	88.94	92.38
11 30	79.76	82.72	85.84	89.10	92.56
12 0	79.93	82.89	86.02	89.29	92.75

1894 APRIL 2. ZONE 35. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	......	32.0	34.1	36.1	38.4	40.6	c	37 36.25	56 14 5.0 28.0	III A	42.240	7 38 22.18	17 27 29.76	−17 2113
2	8.5	18.8	20.8	23.0	25.1	27.3	c	38 23.01	56 14 " "	III B	37.330	7 39 8.96	17 19 31.20	17 2118
3	8.0	23.8	25.9	28.0	30.2	32.4	c	39 28.07	56 14 " "	V A	41.120	7 40 14.01	17 27 10.82	17 2130
4	8.6	32.7	34.8	36.8	41.2	42.6	c_3 d_2	40 32.64	53 42 5.0 25.8	V A	44.500	7 41 18.90	14 56 7.36	14 2198
5	8.7	8.6	10.7	12.9	17.0	18.7	c_3 d_2	47 8.54	56 34 5.0 28.0	V	46.130	7 47 54.44	17 45 37.58	17 2198
6	8.8	58.6	0.7	2.9	5.0	7.2	c	48 2.89	55 22 5.0 28.0	V	47.030	7 48 48.94	16 33 51.62	16 2175
7	8.6	23.1	25.1	27.5	31.6	33.3	c_3 d_2	48 23.11	55 22 " "	VI A	42.330	7 49 9.16	16 35 35.97	16 2180
8	9.1	18.1	20.2	22.0	23.9	25.9	e	52 52.17	56 18 5.0 27.1	VII	43.940	7 53 38.11	17 28 58.69	17 2252
9	5.0	33.0	35.2	37.3	39.5	41.7	c	54 37.35	56 56 5.0 28.1	III	45.430	7 55 23.22	18 7 27.23	18 2118
10	9.3	13.4	15.4	17.7	19.9	22.1	c	55 17.71	56 10 5.0 28.1	V	45.780	7 56 3.67	−17 21 33.45	−17 2277
11	9.1	36.3	38.0	40.0	41.9	44.2	a	59 9.56	54 18 5.0 26.3	I	49.750	7 59 55.74	−15 30 40.97	−15 2237
12	9.0	21.1	23.0	24.9	26.7	29.0	a	59 54.39	54 8 5.0 27.1	I	47.735	8 0 40.60	15 20 2.89	15 2243
13	9.4	7.7	9.5	11.6	13.6	15.6	a	0 41.22	55 20 5.0 27.4	I	45.800	8 1 27.28	16 31 29.90	16 2286
14	9.3	46.5	48.2	50.3	52.2	54.5	a	2 20.09	56 6 5.0 27.8	I	48.805	8 3 6.06	17 18 30.30	17 2340
15	8.7	50.0	51.9	53.8	55.7	58.0	a	3 23.77	56 54 5.0 28.1	III	47.710	8 4 9.64	18 6 14.33	17 2352
16	8.4	52.4	54.5	56.6	58.8	1.1	(c)	3 56.69	55 52 5.0 27.2	III	47.600	8 4 42.70	17 4 8.85	16 2319
17	9.1	35.3	37.2	39.1	41.1	43.3	a	5 8.91	55 52 " "	I	48.850	8 5 54.92	17 4 31.34	16 2329
18	9.4	55.8	57.6	59.6	1.5	3.7	a	5 29.35	55 52 " "	III A	42.510	8 6 15.36	17 5 45.73	16 2332
19	8.2	22.6	24.7	27.0	29.1	31.4	c	6 26.97	55 14 5 0 26.3	III	49.220	8 7 13.06	16 26 38.46	16 2341
20	8.8	22.9	24.5	26.4	28.4	30.6	a	7 56.15	55 8 5.0 27.5	III	44.035	8 8 42.25	−16 19 0.72	−16 2350
21	8.9	17.8	20.0	22.1	26.2	27.9	c_3 d_2	8 17.78	55 44 5.0 27.8	V B	36.250	8 9 3.82	−16 49 23.79	−16 2352
22	9.0	57.4	59.5	1.5	3.4	5.4	e	8 31.69	55 44 " "	VII	32.840	8 9 17.73	16 51 32.81	16 2353
23	9.0	0.3	2.0	4.0	6.0	8.2	a	18 33.77	55 38 5.0 26.5	I B	44.940	8 19 19.84	16 46 9.23	16 2427
24	9.5	53.7	55.5	57.3	59.3	1.5	a	19 27.14	55 38 " "	I A	39.380	8 20 13.20	16 50 49.24	16 2435
25	8.9	26.7	28.5	30.5	32.5	34.7	a	23 0.29	55 54 5.0 28.5	I B	53.310	8 23 46.33	17 4 52.14	16 2463
26	8.8	4.2	6.7	8.6	10.7	12.9	c	23 8.63	55 54 " "	III B	49.650	8 23 54.67	17 3 44.28	16 2464
27	8.6	23.9	25.8	27.8	29.7	31.7	a	25 57.68	57 0 5.0 28.1	I	47.740	8 26 43.60	18 12 22.75	18 2377
28	9.2	26.0	27.8	29.8	31.8	34.0	a	26 59.67	56 24 5.0 27.6	I	42.550	8 27 45.66	17 34 42.23	17 2536
29	7.9	12.0	13.9	15.8	17.7	19.9	a	27 45.32	54 14 5.0 27.0	I	45.140	8 28 31.55	15 25 25.27	15 2487
30	9.5	15.7	17.6	19.4	21.4	23.5	a	28 48.95	54 2 3.4 24.3	I	42.630	8 29 35.20	−15 12 35.19	−15 2502

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
31	9.0	30.6	33.[illegible]	34.9	36.7	38.7	e	29 5.12	55 6 5.0 27.1	V	47.520	8 29 51.25	−16 18 17.02	−16 2509
32	9.1	4.2	6.0	8.0	10.0	12.0	a	33 37.59	54 50 5.0 27.7	I	46.900	8 34 23.77	16 2 3.07	15 2535
33	9.2	52.0	53.8	55.7	57.6	0.0	a	34 25.24	53 58 5.0 26.3	IV	44.210	8 35 11.51	15 9 11.83	14 2604
34	9.3	14.5	16.0	20.2	22.2	24.6	b_2 c_3	35 24.51	54 44 5.0 27.6	III A	44.500	8 36 10.70	15 58 32.65	15 2546
35	9.2	7.7	9.8	11.9	13.7	15.6	e	35 42.14	54 44 " "	VII B	41.430	8 36 28.34	15 51 11.84	15 2551
36	9.0	47.5	49.6	51.7	53.9	56.1	c	44 51.77	56 36 5.0 27.9	III	45.220	8 45 37.80	17 47 42.55	17 2664
37	8.9	31.2	33.2	35.5	37.6	39.8	c	45 35.47	53 30 5.0 26.0	V	48.270	8 46 21.81	14 42 32.62	14 2675
38	8.5	15.7	17.7	19.9	24.2	25.7	c_3 d_2	46 15.65	54 20 5.0 26.5	V	47.510	8 47 1.91	15 32 20.91	15 2609
39	8.0	5.0	7.1	9.3	11.5	13.7	c	47 9.33	54 12 5.0 27.1	V	41.650	8 47 55.61	15 22 29.62	15 2616
40	9.1	44.4	46.4	48.5	50.9	52.9	c	47 48.63	55 10 5.0 26.3	V	47.765	8 48 34.81	−16 22 28.66	−16 2621
41	9.3	55.9	58.0	59.9	2.4	4.6	c	49 0.17	56 8 5.0 27.8	III B	50.510	8 49 46.26	−17 18 10.95	−17 2687
42	7.5	32.1	34.2	36.3	40.7	42.0	c_3 d_2	49 32.08	54 12 5.0 27.0	V	46.390	8 50 18.36	15 24 0.67	15 2631
43	8.9	32.9	35.1	37.1	38.9	40.8	e	50 7.23	55 30 5.0 27.0	VII	42.080	8 50 53.38	16 40 43.99	16 2631
44	9.6	29.4	31.5	33.5	35.4	37.3	e	51 3.83	54 34 5.0 27.2	VII	42.740	8 51 50.08	15 44 54.30	15 2644
45	9.0	40.4	42.4	44.5	46.6	48.7	c	52 44.53	53 48 5.0 27.0	III	43.350	8 53 30.86	14 59 1.21	14 2714
46	8.6	16.1	18.3	20.1	22.1	24.1	e	52 50.50	54 56 5.0 26.8	VII	44.080	8 53 36.72	16 7 21.28	15 2654
47	7.6	44.4	46.5	48.5	50.8	52.9	c	53 48.63	54 56 " "	VI	42.470	8 54 34.85	16 6 50.28	15 2659
48	8.6	7.9	9.9	11.7	13.6	15.8	a	55 41.18	53 48 5.0 26.1	I	46.280	8 56 27.52	14 59 55.79	14 2726
49	9.0	55.0	57.4	59.4	1.2	3.2	e	55 29.63	54 46 5.0 26.6	VII	44.430	8 56 15.88	15 57 28.32	15 2667
50	9.1	52.0	54.0	56.1	58.4	0.6	c	56 56.23	54 46 " "	III B	46.580	8 57 42.49	−15 54 54.36	−15 2674
51	8.7	40.6	42.7	45.0	47.2	49.3	c	57 44.97	56 4 5.0 28.0	V	44.215	8 58 31.10	−17 15 28.12	−17 2726
52	8.6	35.9	38.0	40.2	42.5	44.6	c	58 40.25	56 56 5.0 28.1	V	48.350	8 59 26.29	18 8 49.91	17 2730
53	8.9	11.2	13.1	15.0	16.9	19.1	a	2 44.62	54 54 5.0 26.7	I	44.890	9 3 30.87	16 5 35.14	15 2710
54	6.8	43.6	45.7	47.7	49.7	51.9	a	3 17.25	54 40 5.0 26.0	III	46.820	9 4 3.53	15 52 12.87	15 2712
55	9.0	36.4	38.4	40.7	43.0	45.0	c	3 40.71	56 6 6.5 28.5	V	43.600	9 4 26.86	17 17 19.58	17 2764
56	8.1	50.0	52.0	53.9	55.9	58.0	a	5 23.73	56 18 6.5 28.0	I B	36.610	9 6 9.87	17 23 51.72	17 2772
57	9.0	14.6	16.4	18.6	20.5	22.7	a	5 48.34	56 18 " "	III A	43.500	9 6 34.47	17 32 30.23	17 2773
58	8.8	44.0	45.9	47.9	50.0	52.1	a	21 17.88	56 58 5.0 27.0	I	46.020	9 22 4.02	18 10 9.15	17 2857
59	9.4	36.0	38.0	40.0	42.2	44.3	c	21 40.10	55(38) 5.0 26.6	III	44.800	9 22 26.37	16 49 43.54	16 2786^1
60	9.1	5.9	8.0	10.0	11.8	13.9	e	21 40.12	55(38) " "	VII	45.000	9 22 26.39	−16 49 50.41	−16 2786^2
61	8.4	15.9	17.9	20.0	22.2	24.5	c	23 20.11	56 44 5.0 27.8	V	47.700	9 24 6.29	−17 56 44.90	−17 2868
62	9.1	25.2	27.5	29.4	31.1	33.2	e	28 59.86	53 24 5.0 26.0	VII	44.190	9 29 46.34	14 35 30.58	14 2888
63	8.7	1.4	3.3	5.2	7.3	9.5	a	32 34.91	55 0 5.0 27.1	I	46.110	9 33 21.27	16 12 8.28	16 2844
64	8.1	19.3	21.1	23.0	25.0	27.3	a	33 52.98	56 40 5.0 27.2	I	44.030	9 34 39.22	17 51 34.20	17 2922
65	9.3	12.0	14.2	16.4	20.6	22.0	c_3 d_2	36 12.01	55 58 5.0 26.6	VI	44.270	9 36 58.32	17 9 41.13	16 2862
66	9.1	36.7	38.7	40.8	42.8	44.9	a	40 10.55	56 16 5.0 27.5	III	47.570	9 40 56.86	17 28 44.07	17 2957
67	9.0	37.2	39.3	41.4	43.7	45.8	c	42 41.49	56 10 5.0 27.3	III	47.550	9 43 27.82	17 22 43.99	17 2970
68	8.2	34.0	36.0	38.1	40.4	42.7	c	43 38.25	56 50 5.0 29.0	III	44.430	9 44 24.54	18 1 47.83	17 2974
69	9.4	52.4	54.4	56.2	58.1	0.5	[illegible]	51 26.22	57 0 5.0 28.0	III	42.100	9 52 12.54	−18 11 5.57	−17 3015

1894 APRIL 2. ZONE 36. CLAMP EAST.

SKINNER, OBSERVER.

LITTELL, ASSISTANT.

70	8.3	9.9	11.5	13.6	15.6	17.9	a	5 43.42	55 56 5.0 27.1	I	46.820	10 6 29.91	−17 8 33.29	−16 2989
71	8.0	4.3	6.0	8.0	10.0	12.0	a	6 37.56	54 30 5.0 27.5	I	42.425	10 7 24.14	15 41 5.64	15 3000
72	8.6	16.0	17.9	20.0	22.0	24.2	a	10 49.61	55 4 5.0 26.8	I	47.190	10 11 36.18	16 16 38.60	16 3008
73	9.5	21.1	23.2	25.2	27.4	29.6	c	11 25.31	54 38 5.0 26 8	V	42.320	10 12 11.91	15 49 8.20	15 3022
74	8.8	10.1	11.9	13.8	15.8	18.0	a	15 43.54	55 20 5.0 26.0	I	47.990	10 16 30.13	16 32 55.31	16 3030
75	6.0	34.6	36.8	41.1	42.8	45.5	c_4 d_3	15 32.55	56 16 5.0 28.8	VI	47.250	10 16 19.09	17 28 49.63	17 3129
76	7.8	19.5	21.6	23.7	26.0	28.1	c	16 23.79	56 16 " "	III A	46.630	10 17 10.33	17 31 48.75	17 3133
77	9.1	19.5	21.6	23.9	26.0	28.1	c	17 23.83	55 8 5.0 26.8	V	45.710	10 18 10.44	16 20 15.47	16 3038
78	9.3	19.6	21.4	23.4	25.2	27.5	a	19 52.81	53 44 4.4 25.7	I	46.490	10 20 39.51	14 56 22.47	14 3117
79	8.5	9.3	11.1	13.0	15.1	17.2	a	20 42.88	56 0 5.0 27.6	III A	42.040	10 21 29.46	−17 14 20.83	−17 3146
80	8.7	44.7	46.6	48.6	50.6	52.7	a	21 18.36	56 0 " "	III B	36.200	10 22 4.95	−17 6 4.28	−16 3057
81	9.0	19.5	21.3	23.2	25.2	27.3	a	22 52.79	54 26 5.0 26.2	I A	37.290	10 23 39.47	15 38 43.69	15 3065
82	9.3	4.3	6.2	8.3	10.1	12.4	a	23 38.14	56 52 5.0 28.5	III	44.765	10 24 24.70	18 4 3.38	17 3160
83	8.5	0.6	2.5	4.3	6.4	8.5	a	24 34.03	54 58 5.0 27.6	I	44.090	10 25 20.69	16 9 42.48	15 3069
84	9.5	22.8	24.5	26.6	28.5	30.5	a	25 56.11	54 42 5.0 26.5	I	42.655	10 26 42.80	15 53 14.07	15 3072^1
85	9.8	52.2	54.2	56.6	58.8	0.9	c	25 56.55	54 42 " "	V	42.360	10 26 43.24	15 53 11.91	15 3072^2
86	8.4	41.1	43.0	44.8	46.8	49.1	a	28 14.71	56 6 5.0 27.1	I	46.950	10 29 1.35	17 18 40.83	17 3177
87	8.7	15.3	17.3	19.6	21.9	24.0	c	28 19.63	56 6 " "	V	42.630	10 29 6.27	17 17 22.06	17 3179
88	7.0	27.4	29.2	31.1	33.2	35.4	a	30 1.13	56 50 5.0 28.5	I	48.090	10 30 47.74	18 3 5.91	17 3187
89	6.0	3.6	5.4	7.3	9.3	11.6	a	30 36.96	54 38 5.0 25.5	III	43.670	10 31 23.68	−15 49 35.38	−15 3087
90	9.0	1.6	3.6	5.8	8.0	10.2	c	31 5.85	56 40 5.0 27.2	V	44.270	10 31 52.48	−17 51 55.65	−17 3192
91	9.3	21.3	23.4	25.3	27.3	29.5	a	32 55.04	55 38 5 0 26.9	I	45.925	10 33 41.73	16 50 20.60	16 3099
92	9.0	19.5	21.6	23.7	26.0	28.2	c	33 23.81	56 30 5.0 27.5	III	47.240	10 34 10.46	17 42 50.57	17 3202
93	9.0	51.8	53.7	58.0	59.5	2.2	c_4 d_3	33 49.48	55 0 5.0 27.5	VI	48.550	10 34 36.20	16 13 13.27	15 3099
94	9.1	48.8	50.9	53.0	55.2	57.4	c	34 53.07	56 54 5.0 28.5	V	43.710	10 35 39.72	18 5 47.07	17 3209
95	8.9	50.5	52.4	54.2	56.2	58.4	a	36 23.73	53 38 3.5 25.4	I	47.700	10 37 10.53	14 50 47.60	14 3165
96	8.8	53.1	55.2	57.4	59.7	1.8	c	36 57.45	56 48 5.0 27.9	V	47.140	10 37 44.12	18 0 52.10	17 3217
97	9.4	41.2	43.4	47.8	49.2	52.0	c_4 d_3	37 39.22	53 14 5.0 26.8	VI	45.040	10 38 26.04	14 26 1.71	14 3166
98	9.1	48.0	50.0	52.3	54.5	56.6	c	38 52.29	54 40 4.2 25.8	III	44.405	10 39 39.07	15 51 50.61	15 3120
99	9.3	42.3	44.0	46.0	48.0	50.2	a	40 15.62	54 40 " "	I B	47.230	10 41 2.41	−15 49 30.51	−15 3122

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
100	8.0	19.5	21.3	23.4	25.3	27.5	a	40 53.32	57 8	5.0	27.3	III	46.970	10 41 40.01	−18 20 48.68	−18 3023
101	9.2	7.2	9.1	10.9	12.9	15.0	a	41 40.51	54 22	5.0	27.3	III	43.710	10 42 27.32	15 33 38.07	15 3130
102	8.8	17.0	19.1	21.3	23.4	25.6	c	42 21.29	53 14	4.8	26.0	III	44.965	10 43 8.15	14 25 58.13	14 3190
103	9.3	26.4	28.5	30.8	32.9	35.2	c	43 30.77	56 46	5.0	(28.0)	V	48.280	10 44 17.50	17 59 14.78	17 3239
104	8.9	37.9	39.9	42.0	44.3	46.6	c	46 42.15	57 10	5.0	27.6	III	43.160	10 47 28.88	18 21 37.28	18 3014
105	9.4	12.0	14.2	16.5	18.6	20.8	(c)	49 16.43	55 44	5.0	26.8	III	44.890	10 50 3.23	16 56 5.53	16 3146
106	9.3	9.8	12.0	14.0	15.9	17.8	e	49 44.45	53 32	4.5	25.4	V	45.630	10 50 31.34	14 44 13.83	14 3224
107	9.1	52.2	54.2	56.3	58.6	1.0	c	50 56.47	56 56	5.0	27.5	V	44.510	10 51 43.25	18 8 4.37	17 3259
108	9.3	0.9	3.0	5.0	6.9	8.9	e	51 35.26	55 12	5.0	26.9	V	46.880	10 52 22.10	16 24 43.78	16 3155
109	9.5	39.7	42.0	44.0	45.9	47.8	e	52 14.20	55 12	"	"	VII A	41.630	10 53 1.06	−16 26 18.23	−16 3157
110	6.0	43.0	45.2	47.4	49.6	51.8	c	53 47.41	54 36	4.5	26.0	III	48.070	10 54 34.29	−15 49 2.56	−15 3174
111	8.8	37.3	39.7	41.6	43.5	45.5	e	54 11.78	55 34	5.0	26.5	VII	47.125	10 54 58.64	16 46 51.13	16 3164
112	8.1	41.5	43.4	45.6	48.0	50.0	c	55 45.71	55 12	5.0	28.0	III	45.890	10 56 32.59	16 24 24.38	16 3172
113	8.9	34.9	37.0	39.0	43.4	44.9	c_3 d_2	56 34.86	53 48	5.0	26.0	VI	43.140	10 57 21.79	14 59 29.35	14 3246
114	9.5	42.1	44.1	46.3	48.5	50.6	c	57 46.33	54 26	5.0	27.5	III	45.680	10 58 33.25	15 38 18.06	15 3186
115	9.4	11.8	13.4	15.5	17.5	19.6	a	59 45.13	54 58	5.0	26.3	I	48.280	11 0 32.04	16 11 6.97	15 3191
116	7.9	7.7	9.5	11.5	13.5	15.6	a	0 41.11	54 48	5.0	26.8	I	42.870	11 1 28.04	15 59 23.82	15 3196
117	8.0	3.8	5.7	7.7	9.6	11.7	a	1 37.08	53 38	5.0	26.0	I	43.160	11 2 24.04	14 49 25.68	14 3263
118	8.8	28.5	30.3	32.4	34.4	36.5	a	4 1.76	53 20	5.0	26.5	I	47.435	11 4 48.74	14 32 46.73	14 3272
119	8.9	18.3	20.3	22.5	24.7	26.9	c	4 22.55	55 54	5.0	26.8	V B	40.120	11 5 9.48	−17 1 26.34	−16 3198
120	9.0	5.1	7.3	9.6	11.8	14.0	c	5 9.57	55 54	"	"	III A	43.895	11 5 56.51	−17 9 2.19	−16 3199
121	8.6	48.9	51.2	53.0	55.0	57.2	e	5 23.35	52 22	5.0	27.1	VII	48.670	11 6 10.30	16 35 21.53	16 3200
122	8.5	49.3	51.4	53.8	55.9	58.0	c	6 53.69	56 56	5.0	27.8	V	43.850	11 7 40.62	18 7 53.88	17 3323
123	9.4	44.7	46.9	49.0	51.2	53.3	c	7 49.03	54 12	5.0	26.3	V	47.525	11 8 36.03	15 24 54.62	15 3223^1
124	9.3	37.6	40.0	42.0	43.8	45.7	e	9 11.84	57 2	5.0	28.2	V	47.690	11 9 58.78	18 15 7.77	18 3135
125	9.2	30.0	32.2	34.5	36.5	38.7	c	12 34.39	54 48	5.0	26.3	V	45.460	11 13 21.41	16 0 17.54	15 3238
126	9.0	27.5	29.2	31.1	33.0	35.2	a	14 0.57	53 34	4.2	25.5	III	44.475	11 14 47.62	14 45 52.87	14 3305
127	9.5	35.3	37.1	39.0	41.0	43.3	a	15 9.04	56 58	5.0	27.8	III	46.090	11 15 56.03	18 10 35.79	17 3359
128	9.4	47.9	49.6	51.5	53.6	55.7	a	16 21.40	56 4	5.0	27.2	I	46.520	11 17 8.42	17 16 38.98	17 3363
129	9.4	21.2	23.1	25.1	27.1	29.1	a	16 54.92	56 32	5.0	27.6	III B	41.710	11 17 41.94	−17 39 58.65	−17 3365
130	8.9	13.0	14.8	16.8	18.9	21.0	a	17 46.72	56 32	"	"	I A	41.410	11 18 33.76	−17 46 16.76	−17 3368
131	9.1	48.8	51.1	53.1	54.9	57.3	a	18 22.97	57 14	5.0	27.4	III	43.160	11 19 10.00	18 25 40.98	18 3167
132	9.3	17.9	19.6	21.6	23.5	25.7	a	19 51.34	55 40	3.5	26.1	I	44.450	11 20 38.41	16 51 57.26	16 3247
133	9.2	9.2	11.1	13.3	15.6	17.7	c	20 13.39	53 12	3.5	25.5	V	44.620	11 21 0.50	14 23 56.34	14 3321
134	8.3	17.8	19.8	22.0	24.2	26.1	c	21 21.99	53 54	5.0	26.7	V	43.240	11 22 9.10	15 5 33.50	14 3326
135	9.0	17.2	19.3	21.4	23.7	25.8	c	22 21.49	57 6	5.0	28.4	V	46.060	11 23 8.55	18 18 38.19	18 3182
136	8.8	20.5	22.8	24.9	27.1	29.1	c	23 24.89	55 36	5.0	28.0	V	44.240	11 24 11.99	16 47 58.46	16 3258
137	8.6	51.5	53.8	55.7	57.6	59.6	e	23 25.90	55 36	"	"	VII	45.400	11 24 13.00	16 48 21.99	16 3259
138	9.5	53.0	55.5	57.1	59.0	1.2	e	24 27.28	56 26	6.5	0.0	VII	43.600	11 25 14.37	17 37 52.21	17 3400
139	9.5	0.9	3.0	5.2	7.4	9.4	c	26 5.19	56 28	5.0	28.2	V	48.100	11 26 52.30	−17 41 15.02	−17 3404
140	9.6	48.2	50.4	52.5	54.6	56.7	c	26 52.49	55 44	5.0	27.1	V	42.315	11 27 39.61	−16 55 22.01	−16 3275
141	6.0	50.6	52.7	54.5	56.4	58.5	(e)	27 24.95	54 36	5.0	26.5	VII B	40.750	11 28 12.09	15 43 37.41	15 3295
142	9.0	42.2	44.6	46.6	48.5	50.4	e	28 16.86	54 36	"	"	V A	43.680	11 29 4.00	15 50 57.24	15 3298
143	9.0	50.8	52.9	55.0	57.4	59.5	c	29 55.13	56 10	5.0	28.1	III	45.680	11 30 42.27	17 22 26.50	17 3418
144	9.4	32.0	34.2	36.3	38.5	40.6	c	30 36.33	56 30	5.0	28.0	V	44.960	11 31 23.48	17 42 15.50	17 3420
145	9.2	11.5	13.5	15.4	17.3	19.6	a	31 45.06	55 14	5.0	26.8	III B	43.940	11 32 32.24	16 22 37.51	16 3293^1
146	9.3	40.8	42.8	45.0	47.1	49.3	c	31 45.01	55 14	"	"	V (B)	43.030	11 32 32.19	16 22 21.76	16 3293^2
147	9.1	11.8	13.9	15.9	18.2	20.3	c	32 16.03	55 14	"	"	V A	39.230	11 33 3.21	16 27 34.83	16 3295
148	9.3	52.1	54.5	56.3	58.2	0.1	e	33 26.72	54 4	5.0	26.3	VII	44.610	11 34 13.92	15 16 1.96	15 3322
149	9.6	34.5	36.6	38.6	40.5	42.4	e	34 8.56	56 56	5.0	28.0	VII	45.730	11 34 55.74	−18 8 33.20	−17 3436
150	9.5	3.7	6.0	8.0	9.8	11.9	e	34 37.91	56 56	"	"	VII A	46.195	11 35 25.10	−18 11 54.98	−17 3438
151	8.0	7.9	10.0	12.1	14.5	16.6	c	36 12.23	55 16	5.0	27.2	V	43.650	11 36 59.44	16 27 46.45	16 3308
152	9.1	51.9	53.7	55.6	57.7	59.9	a	37 25.21	54 10	5.0	25.7	III	41.800	11 38 12.44	15 21 5.54	15 3340
153	8.8	39.0	40.9	42.8	44.7	47.0	a	38 12.27	53 42	5.0	26.5	III	44.910	11 38 59.51	14 54 3.81	14 3391
154	5.8	50.0	52.1	54.3	56.4	58.5	c	38 54.27	56 34	5.0	27.4	III	49.560	11 39 41.50	17 47 41.71	17 3460
155	9.5	53.5	55.6	57.6	59.8	2.0	c	39 57.71	56 26	5.0	28.1	III	42.760	11 40 44.95	17 37 32.19	17 3465
156	9.7	48.6	50.8	52.9	55.0	57.2	c	40 52.91	56 6	5.0	26.1	III	45.665	11 41 40.16	17 18 25.44	17 3469
157	6.8	26.3	28.5	30.5	32.9	35.0	c	41 30.65	56 36	5.0	28.0	V	48.550	11 42 17.90	17 49 24.62	17 3471
158	8.0	12.6	14.9	17.0	19.1	21.3	c	42 16.99	54 48	3.8	25.8	V	43.010	11 43 4.25	15 59 31.20	15 3356
159	8.3	56.0	58.1	0.3	2.5	4.6	c	43 0.31	54 48	"	"	III A	42.470	11 43 47.58	−16 2 32.37	−15 3358
160	9.0	0.1	2.2	4.4	6.6	8.7	c	44 4.41	56 24	5.0	28.5	III	46.070	11 44 51.70	−17 36 35.42	−17 3484
161	9.1	44.7	46.7	49.0	51.3	53.3	c	44 49.01	56 58	5.0	27.8	V	46.840	11 45 36.30	18 10 53.29	17 3485
162	8.9	39.9	42.1	44.3	46.5	48.6	c	45 44.29	56 58	"	"	III A	47.170	11 46 31.59	18 14 11.09	17 3487
163	9.0	32.8	35.0	37.1	39.5	41.7	c	46 37.23	56 34	5.0	28.4	V	46.680	11 47 24.54	17 46 49.21	17 3490
164	8.8	29.5	31.9	33.8	35.7	37.5	e	47 3.82	56 18	3.8	26.5	VII	45.860	11 47 51.14	17 30 32.60	17 3492
165	9.1	10.4	12.7	14.9	19.1	20.7	c_3 d_2	48 10.53	56 18	"	"	VII B	34.640	11 48 57.87	17 23 46.54	17 3496
166	9.2	17.3	19.4	21.6	23.8	26.0	c	49 21.63	56 18	"	"	III A	44.120	11 50 8.97	17 33 9.57	17 3505
167	9.3	59.0	1.0	2.8	5.0	7.2	a	50 32.78	56 18	"	"	I A	43.860	11 51 20.13	17 33 2.91	17 3510
168	9.0	23.6	25.5	27.4	29.4	31.6	a	51 57.28	56 18	"	"	I A	42.650	11 52 44.64	17 32 39.88	17 3517
169	8.9	18.6	20.3	22.4	24.3	26.5	a	52 52.15	56 0	5.0	28.0	I	44.880	11 53 39.52	−17 12 9.46	−16 3367
170	9.6	12.4	14.3	16.2	18.3	20.4	a	53 46.24	57 8	5.0	28.9	I	44.060	11 54 33.62	−18 19 58.12	−18 3200
171	9.3	26.3	28.2	30.0	32.1	34.2	a	56 59.88	55 54	5.0	27.9	III	48.490	11 57 47.28	17 7 19.64	16 3379
172	9.1	50.4	52.7	54.6	56.5	58.5	e	57 24.81	55 32	5.0	28.5	VII	43.960	11 58 12.21	16 43 55.59	16 3380
173	9.2	14.5	16.6	18.7	21.0	23.0	c	1 18.77	56 8	5.0	29.1	V	48.645	12 2 6.23	17 21 25.53	17 3555
174	9.1	9.9	12.0	14.0	16.3	18.4	c	2 14.13	53 22	5.0	26.5	V	44.640	12 3 1.56	−14 33 59.43	−14 3462

Reduction Elements. Zones 35 and 36.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 2.3	+0.216	−0.077	+0.116	+0.201	−0.090	+0.078
2.5	−0.186	−0.104	+0.039			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	26 Monocerotis		*e* Navis		Lalande 16304		Lalande 17333		θ Pyxidis Nautilis		Lalande 18817	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	48 8 0.20		61 26 1.25		51 6 0.50		57 12 1.55		64 20 1.10		59 28 0.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	45.985	5 52.25	42.660	4 48.15	46.180	5 55.30	44.500	5 23.34	45.180	5 35.79	46.205	5 54.98
II Red. to Mer.	.990	1.71	.620	1.58	.140	1.69	.470	1.63	.130	1.55	.105	1.59
VI Inclination	.855		.430		.000		.290		44.900		45.950	
VII Refraction	.780	1 5.7	.420	1 47.9	45.930	1 13.2	.270	1 31.6	.935	2 3.1	.920	1 40.5

	κ Hydrae		Lalande 19433		41 Sextantis		*b*² Hydrae		Lalande 22585		ε Corvi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	52 39 59.40		57 20 1.40		47 10 0.30		58 24 0.90		48 40 0.35		60 52 0.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	48.200	6 34.13	45.340	5 39.08		5 52.94		5 17.36	47.150	6 13.54	42.950	4 53.52
II Red. to Mer.	.175	1.67	.285	1.63		1.72	44.160	1.64	.150	1.70	.895	1.58
VI Inclination	.060		.130		45.985	2.04	.030	0.82	46.880		.740	
VII Refraction	47.980	1 17.9	.080	1 32.6	.890	1 4.3	.010	1 36.8	.905	1 8.1	.670	1 47.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
26 Monocerotis	7 35 41.20	11	+0.20	+30.24	48 14 59.9	41.4
Groombridge 1374	7 47 2.97	9	+0.30	[+30.17]	324 44	....
e Navis	7 51 48.35	11	+0.25	+30.14	61 32 38.9	40.6
Lalande 16304	8 12 52.53	11	+0.21	+30.22	51 13 10.7	40.9
Lalande 17333	8 41 26.05	11	+0.23	+30.30	57 18 58.1	39.0
θ Pyxidis Nautilis	9 16 18.55	11	+0.26	+30.24	64 27 41.5	38.9
Lalande 18817	9 27 50.15	11	+0.24	+30.41	59 35 37.8	40.0
κ Hydrae	9 34 44.16	11	+0.22	+30.31	52 47 53.1	39.2
Groombridge 1586	9 48 29.25	9	+0.29	[+30.37]	325 32	....
Lalande 19433	9 49 22.95	11	+0.23	+30.30	57 27 14.7	38.5
41 Sextantis	10 44 29.96	10	+0.20	+30.35	47 17 1.3	41.2
*b*² Hydrae	10 47 49.12	11	+0.23	+30.43	58 30 57.5	40.8
Lalande 22585	11 54 49.10	11	+0.20	+30.41	48 47 23.7	42.1
Groombridge 1852	11 59 29.81	8	+0.38	[+30.53]	321 26	....
ε Corvi	12 4 11.37	11	+0.24	+30.36	60 58 43.0	41.4

h			s
8.000	*dt*		+30.232
	Hourly rate		+ 0.0465

	° ′ ″
Adopted Equator Point	38 56 40.33

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 33	29.885	45.4	44.1
8 15	29.905	44.0	42.7
9 0	29.935	42.8	41.6
9 45	29.955	41.9	40.4
10 4	29.955	41.4	39.9
11 12	29.965	39.8	38.3
12 7	29.975	38.3	36.7

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	+0.212	7 30	......	+15.942	+15.813	+15.681	+15.548	+15.414
53	0.215	8 0	......	15.910	15.788	15.667	15.542	15.417
54	0.218	8 30	......	15.908	15.798	15.686	15.575	15.460
55	0.221	9 0	......	15.941	15.843	15.746	15.647	15.546
56	0.225	9 30	......	16.007	15.923	15.840	15.756	15.671
57	+0.228	10 0	......	16.104	16.037	15.971	15.902	15.832
		10 30	......	16.230	16.182	16.131	16.082	16.030
		11 0	+16.417	16.386	16.355	16.323	16.291	16.258
		11 30	+16.578	16.566	16.554	16.541	16.528	16.513
		12 0	......	16.769	16.774	16.781	16.787	16.793
		12 30	......	+16.990	+17.014	+17.040	+17.065	+17.089

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894. 0.						*R*						
	52°	53°	54°	55°	56°	57°	52°	53°	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″	″
7 30	.....	− 4. 81	− 5. 10	− 5. 38	− 5. 64	− 5. 91	74. 99	77. 73	80. 61	83. 62	86. 80	90. 12	91. 85
8 0	.....	5. 68	5. 96	6. 23	6. 49	6. 75	75. 18	77. 93	80. 82	83. 83	87. 02	90. 34	92. 09
8 30	.....	6. 59	6. 85	7. 11	7. 36	7. 61	75. 37	78. 13	81. 02	84. 04	87. 24	90. 57	92. 32
9 0	.....	7. 52	7. 75	7. 99	8. 22	8. 45	75. 53	78. 29	81. 19	84. 22	87. 42	90. 76	92. 51
9 30	.....	8. 45	8. 66	8. 87	9. 09	9. 29	75. 68	78. 45	81. 36	84. 39	87. 60	90. 95	92. 70
10 0	.....	9. 36	9. 55	9. 73	9. 92	10. 10	75. 82	78. 60	81. 51	84. 55	87. 76	91. 12	92. 88
10 30	.....	10. 25	10. 40	10. 56	10. 71	10. 85	75. 94	78. 72	81. 64	84. 68	87. 90	91. 26	93. 02
11 0	−10. 96	11. 09	11. 21	11. 32	11. 44	11. 56	76. 08	78. 87	81. 79	84. 84	88. 06	91. 43	93. 20
11 30	−11. 78	11. 87	11. 95	12. 04	12. 12	12. 18	76. 22	79. 01	81. 94	85. 00	88. 23	91. 60	93. 37
12 0	.....	12. 58	12. 62	12. 67	12. 71	12. 75	76. 38	79. 18	82. 11	85. 17	88. 41	91. 79	93. 56
12 30	.....	−13. 21	−13. 21	−13. 22	−13. 22	−13. 22	.....	.....	.....	.....	.....	.....	.....

1894 APRIL 5. ZONE 37. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8. 6	34. 8	37. 0	39. 0	41. 0	42. 9	e	53 9. 02	56 44 10. 0 2. 9	V 44. 020	7 53 57. 65	−17 55 4. 55	−17 2257
2	9. 0	20. 3	22. 1	24. 0	26. 1	28. 3	a	54 53. 95	56 28 10. 0 2. 1	III B 38. 390	7 55 42. 66	17 34 2. 98	17 2273
3	8. 2	56. 5	58. 6	0. 9	3. 0	5. 0	c	55 0. 81	56 28 " "	V A 48. 820	7 55 49. 50	17 43 48. 52	17 2274-
4	8. 0	36. 4	38. 8	40. 6	42. 4	44. 4	e	55 10. 63	56 28 " "	VII 44. 760	7 55 59. 33	17 39 19. 76	17 2276
5	9. 1	19. 8	21. 6	23. 7	25. 5	27. 8	a	58 53. 38	55 44 10. 0 2. 3	I A 46. 055	7 59 42. 16	16 58 52. 28	16 2272
6	9. 2	16. 5	18. 2	20. 0	22. 1	24. 5	a	59 49. 95	55 44 " "	I 47. 730	8 0 38. 73	16 56 11. 33	16 2278
7	8. 8	33. 3	35. 0	36. 8	38. 8	41. 1	a	1 6. 69	55 44 " "	I 42. 870	8 1 55. 48	16 54 39. 38	16 2291
8	9. 1	18. 6	20. 8	22. 8	25. 0	27. 4	c	4 22. 93	56 10 10. 0 3. 6	III (A) 45. 400	8 5 11. 66	17 24 45. 80	17 2363
9	9. 0	3. 7	5. 7	7. 9	10. 0	12. 1	c	5 7. 89	56 10 " "	III 43. 575	8 5 56. 64	17 20 58. 22	17 2373
10	9. 1	58. 0	0. 0	1. 8	3. 8	6. 0	a	6 31. 67	56 10 " "	I B 38. 550	8 7 20. 42	−17 16 9. 13	−17 2385
11	9. 0	54. 0	56. 2	58. 1	59. 9	2. 0	e	6 28. 52	54 2 10. 0 1. 2	V 46. 260	8 7 17. 50	−15 13 44. 41	−15 2307
12	9. 3	16. 2	18. 5	20. 4	22. 2	24. 2	e	7 50. 71	54 34 10. 0 1. 5	VII 46. 280	8 8 39. 64	15 45 48. 37	15 2323
13	8. 8	52. 0	53. 9	58. 3	0. 0	2. 5	c_4 d_3	8 49. 80	54 34 " "	VI 42. 220	8 9 38. 72	15 44 30. 83	15 2333
14	9. 1	10. 8	12. 6	14. 4	16. 5	18. 7	a	18 44. 23	55 18 10. 0 2. 5	I A 47. 180	8 19 33. 06	16 33 20. 87	16 2429
15	9. 0	6. 0	7. 8	9. 8	11. 8	14. 0	a	19 39. 49	55 18 " "	I B 48. 790	8 20 28. 33	16 27 26. 44	16 2438
16	8. 7	16. 9	18. 7	20. 6	22. 7	24. 9	a	22 50. 57	56 30 10. 0 3. 0	I 47. 500	8 23 39. 28	17 42 19. 18	17 2510
17	8. 8	58. 7	0. 6	2. 5	4. 4	6. 8	a	23 32. 40	56 30 " "	I B 43. 160	8 24 21. 14	17 37 44. 57	17 2515
18	9. 0	50. 6	52. 3	54. 1	56. 3	58. 4	a	25 24. 16	56 30 " "	I A 40. 180	8 26 12. 88	17 43 14. 07	17 2527
19	9. 0	23. 3	25. 5	27. 8	30. 0	32. 2	c	25 27. 77	56 30 " "	III A 49. 370	8 26 16. 48	17 46 10. 76	17 2528
20	8. 0	33. 0	35. 2	37. 1	39. 0	41. 0	e	28 7. 47	54 34 10. 0 2. 1	VII 46. 750	8 28 56. 40	−15 46 5. 87	−15 2494
21	9. 0	51. 2	53. 0	54. 9	56. 8	59. 0	a	34 24. 86	57 0 10. 0 3. 2	I B 35. 560	8 35 13. 55	−18 5 25. 78	17 2601
22	9. 2	14. 1	16. 0	17. 8	20. 0	22. 3	a	34 47. 95	57 0 " "	III A 47. 710	8 35 36. 61	18 15 44. 45	18 2435
23	9. 1	52. 8	54. 6	56. 5	58. 5	0. 7	a	35 26. 53	57 0 " "	III A 41. 920	8 36 15. 20	18 13 54. 50	18 2440
24	8. 9	16. 1	18. 2	20. 5	22. 7	25. 0	c	46 20. 51	55 24 10. 0 2. 3	III 44. 540	8 47 9. 37	16 35 30. 09	16 2609
25	8. 1	30. 4	32. 6	34. 7	37. 0	39. 3	c	46 34. 81	55 24 " "	V B 42. 960	8 47 23. 68	16 31 49. 34	16 2611
26	7. 2	5. 6	7. 5	9. 4	11. 5	13. 6	a	47 39. 15	55 24 " "	III 41. 080	8 48 28. 02	16 34 24. 71	16 2618
27	8. 5	14. 3	16. 5	18. 7	21. 0	23. 0	c	48 18. 71	55 38 10. 0 2. 2	III 47. 235	8 49 7. 55	16 50 22. 72	16 2626
28	7. 7	50. 2	52. 0	54. 0	56. 0	58. 2	a	51 23. 79	55 48 10. 0 2. 0	I A 45. 260	8 52 12. 62	17 2 58. 03	16 2644
29	9. 0	52. 5	54. 1	56. 0	58. 1	0. 3	a	52 25. 89	55 48 " "	I B 42. 110	8 53 14. 73	16 55 32. 95	16 2648
30	8. 0	36. 3	38. 3	40. 1	42. 0	44. 1	a	53 9. 86	55 48 " "	I B 49. 740	8 53 58. 70	−16 57 58. 44	−16 2652
31	8. 5	37. 1	39. 0	41. 0	43. 0	45. 2	a	54 10. 73	55 34 10. 0 2. 3	I A 41. 650	8 54 59. 59	−16 47 49. 77	−16 2658
32	8. 6	53. 0	54. 9	56. 8	58. 8	1. 0	(a)	55 26. 55	55 34 " "	III B 39. 380	8 56 15. 42	16 40 43. 28	16 2663
33	9. 4	15. 8	17. 7	19. 5	21. 5	23. 8	a	56 49. 31	55 34 " "	I B 42. 600	8 57 38. 19	16 41 43. 32	16 2667
34	9. 4	21. 6	23. 6	25. 4	27. 3	29. 7	a	57 55. 23	55 56 10. 0 2. 3	I B 45. 360	8 58 44. 07	17 4 37. 29	16 2670
35	7. 0	44. 4	46. 3	48. 3	50. 2	52. 3	a	58 18. 01	55 56 " "	III B 49. 670	8 59 6. 85	17 6 1. 22	16 2672
36	9. 0	17. 8	19. 8	22. 1	24. 3	26. 7	c	58 22. 15	55 56 " "	V 51. 880	8 59 10. 98	17 9 57. 28	16 2673
37	8. 7	24. 4	26. 1	28. 1	30. 1	32. 5	a	2 57. 86	55 18 10. 0 2. 2	I 43. 680	9 3 46. 76	16 29 17. 42	16 2690
38	8. 9	2. 0	3. 9	6. 0	7. 9	10. 0	a	3 35. 79	56 40 10. 0 2. 7	I B 46. 690	9 4 24. 57	17 49 6. 98	17 2763
39	6. 0	34. 4	36. 4	38. 7	40. 8	43. 0	c	3 38. 67	56 40 " "	III A 46. 210	9 4 27. 44	17 55 25. 07	17 2765
40	9. 1	5. 7	7. 5	9. 5	11. 4	13. 5	a	21 39. 10	55 2 10. 0 2. 1	I 44. 290	9 22 28. 08	−16 13 34. 24	16 2787
41	9. 0	35. 7	37. 7	39. 6	41. 6	43. 8	a	26 9. 32	55 26 10. 0 2. 0	I 45. 360	9 26 58. 29	−16 37 57. 07	16 2812
42	8. 9	51. 7	53. 5	55. 6	57. 6	59. 6	a	26 25. 20	55 10 10. 0 2. 1	III 45. 340	9 27 14. 19	16 21 57. 87	16 2813
43	9. 0	33. 8	35. 7	38. 0	40. 3	42. 5	c	26 38. 07	55 10 " "	III A 48. 610	9 27 27. 05	16 26 13. 27	16 2814
44	9. 1	38. 6	40. 5	42. 5	44. 4	46. 7	a	28 12. 14	55 10 " "	I B 50. 050	9 29 1. 13	16 20 13. 98	16 2828
45	8. 9	25. 7	27. 9	30. 0	32. 1	34. 3	c	28 30. 01	54 2 10. 0 2. 0	V 46. 720	9 29 19. 08	15 14 23. 18	15 2833
46	9. 3	20. 7	23. 1	25. 0	26. 8	28. 8	e	28 55. 02	56 20 10. 0 2. 5	VII 47. 240	9 29 43. 92	17 32 41. 51	17 2898
47	9. 2	23. 7	26. 0	27. 8	29. 7	31. 6	e	29 58. 14	54 50 10. 0 2. 2	VII 43. 855	9 30 47. 16	16 1 32. 81	15 2840
48	8. 1	54. 0	55. 7	57. 8	59. 8	1. 9	a	33 27. 66	56 30 10. 0 2. 4	I A 41. 140	9 34 16. 56	17 43 55. 50	17 2921
49	8. 1	40. 0	41. 9	43. 8	45. 7	48. 0	a	34 13. 68	56 30 " "	I 39. 300	9 35 2. 59	17 36 55. 16	17 2924
50	9. 4	3. 2	5. 1	6. 9	8. 8	11. 3	a	35 36. 83	56 14 10. 0 2. 7	I 44. 180	9 36 25. 76	−17 25 40. 07	−17 2931

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
51	8. 3	44. 6	46. 5	48. 6	50. 5	52. 9	a	36 18. 38	56 14 10. 0	2. 7	I B	38. 460	9 37 7. 32	—17 20 39. 12	—17 2936
52	9. 2	25. 6	27. 5	29. 8	32. 0	34. 3	c	36 29. 85	56 14 "	"	III A	42. 530	9 37 18. 78	17 28 23. 86	17 2938
53	8. 4	40. 0	42. 1	44. 3	46. 3	48. 5	c	37 44. 25	54 40 10. 0	1. 7	III	46. 090	9 38 33. 31	15 52 13. 77	15 2879
54	9. 1	21. 6	23. 9	26. 0	28. 1	30. 2	c	38 25. 97	54 50 10. 0	1. 6	V	43. 290	9 39 15. 02	16 1 22. 72	15 2885
55	9. 6	28. 3	30. 1	32. 0	33. 9	36. 0	a	43 1. 59	54 44 10. 0	1. 6	I B	41. 540	9 43 50. 67	15 51 34. 67	15 2905
56	8. 6	7. 5	9. 6	11. 8	14. 0	16. 0	c	43 11. 79	54 44 "	"	III A	43. 530	9 44 0. 86	15 58 38. 24	15 2907
57	8. 7	32. 9	34. 5	36. 6	38. 6	40. 8	a	47 6. 22	54 42 10. 4	2. 1	I	47. 550	9 47 55. 31	15 54 42. 74	15 2921
58	8. 7	14. 4	16. 2	18. 2	20. 2	22. 4	a	47 47. 72	54 4 10. 0	1. 4	I	47. 385	9 48 36. 85	15 16 37. 46	15 2925
59	9. 4	30. 6	32. 4	34. 4	36. 4	38. 5	a	49 4. 18	55 56 10. 0	2. 0	I	47. 160	9 49 53. 19	17 8 39. 17	16 2918
60	8. 9	17. 8	19. 8	22. 0	24. 1	26. 3	c	49 22. 01	55 4 10. 0	1. 6	V	48. 275	9 50 11. 09	—16 17 1. 18	—16 2919
61	8. 9	7. 5	9. 3	11. 3	13. 2	15. 5	a	19 40. 70	53 20 9. 4	0. 7	I	42. 760	10 20 29. 99	—14 31 13. 98	—14 3116
62	9. 2	54. 0	56. 0	57. 8	59. 7	2. 0	a	20 27. 23	53 20 "	"	I B	41. 410	10 21 16. 53	14 27 36. 19	14 3119
63	8. 9	56. 5	58. 4	0. 6	2. 7	4. 8	c	21 0. 61	54 40 10. 0	1. 5	III	44. 150	10 21 49. 85	15 51 46. 85	15 3060
64	8. 4	35. 5	37. 6	39. 9	42. 0	44. 2	c	21 39. 85	55 40 10. 0	1. 6	V A	42. 130	10 22 29. 03	16 54 26. 15	16 3060
65	9. 1	4. 3	6. 0	8. 5	12. 9	14. 4	c_3 d_2	22 4. 20	55 40 "	"	V B	39. 530	10 22 53. 39	16 47 11. 34	16 3063
66	9. 4	13. 0	14. 8	16. 7	18. 7	20. 8	a	23 46. 48	55 40 "	"	I	46. 200	10 24 35. 68	16 52 27. 58	16 3067
67	9. 3	2. 7	4. 4	6. 3	8. 4	10. 6	a	25 36. 33	56 38 10. 0	2. 6	I A	47. 410	10 26 25. 49	17 54 7. 66	17 3166
68	9. 0	46. 2	47. 8	50. 0	51. 9	54. 1	a	26 19. 83	56 38 "	"	I B	47. 990	10 27 9. 00	17 47 53. 33	17 3170
69	9. 2	1. 0	2. 9	5. 0	7. 0	9. 1	a	27 34. 82	56 38 "	"	I B	42. 500	10 28 24. 00	17 46 9. 03	17 3175
70	9. 0	35. 1	37. 0	38. 9	40. 7	43. 0	a	29 8. 77	56 38 "	"	I B	49. 650	10 29 57. 96	—17 48 25. 42	—17 3182
71	9. 3	39. 0	41. 1	43. 3	45. 4	47. 6	c	0 43. 29	57 6 10. 0	3. 1	V B	45. 540	11 1 32. 68	—18 15 17. 03	—18 3103

Reduction Elements. Zone 37.

	OBSERVED.			ADOPTED.		
1894.	c	b	a	c	b	a
	s	s	s	s	s	s
April 5.3....	+0. 270	—0. 188	+0. 062	+0. 246	—0. 196	+0. 104
5. 4....	+0. 223	—0. 203	+0. 146			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	4 Navis		9 Navis		*e* Navis		ι Navis		Lalande 16304		Bradley 1212	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	53 8 6. 00		52 26 6. 10		61 26 6. 30		62 50 6. 25		51 6 5. 85		46 28 5. 70	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45. 550	5 43. 32	47. 710	6 23. 87	42. 425	4 44. 10	42. 450	4 43. 94	45. 900	5 50. 23		4 36. 68
II Red. to Mer......	. 505	1. 67	. 655	1. 67	. 400	1. 57	. 380	1. 56	. 850	1. 69		1. 72
VI Inclination	. 360		. 460		. 215		. 220		. 720		41. 950	2. 04
VII Refraction.......	. 315	1 17. 2	. 430	1 15. 3	. 230	1 46. 2	. 190	1 52. 7	. 710	1 12. 0	. 905	1 1. 2
	θ Pyxidis Nautilis		υ^2 Hydrae		λ Hydrae		22 Sextantis		δ Crateris		γ Crateris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	64 20 5. 65		51 22 5. 65		50 40 5. 85		46 22 6. 05		53 2 5. 80		55 56 6. 15	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	45. 065	5 34. 42	48. 110	6 32. 06	44. 275	5 19. 30	46. 590	6 2. 87	45. 595	5 44. 13	44. 520	5 23. 79
II Red. to Mer......	. 075	1. 55	. 080	1. 69	. 235	1. 69	. 555	1. 73	. 540	1. 67		1. 64
VI Inclination	44. 865		47. 930		. 105		. 380		. 390		. 290	—0. 40
VII Refraction.......	. 850	2 0. 9	. 860	1 13. 0	. 065	1 11. 2	. 315	1 1. 2	. 375	1 17. 6		1 26. 6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
4 Navis............	7 40 31. 39	11	+0. 22	+33. 02	53 15 8. 2	40. 1
9 Navis............	7 46 19. 24	11	+0. 22	+33. 00	52 33 46. 9	40. 3
e Navis............	7 51 45. 48	11	+0. 26	+32. 93	61 32 38. 2	39. 8
ι Navis............	8 2 29. 25	11	+0. 27	+32. 92	62 56 44. 5	39. 9
Lalande 16304.....	8 12 49. 80	11	+0. 21	+32. 89	51 13 9. 8	40. 0
Groombridge 1446 .	8 27 26. 08	8	+0. 09	[+33. 06]	324 56	....
Bradley 1212	8 29 45. 74	11	+0. 19	+32. 81	46 33 47. 3	39. 3
θ Pyxidis Nautilis...	9 16 15. 85	11	+0. 28	+32. 86	64 27 42. 5	39. 7
υ^2 Hydrae..........	9 59 26. 02	11	+0. 21	+32. 84	51 29 52. 4	40. 6
λ Hydrae..........	10 4 53. 40	11	+0. 21	+32. 93	50 46 38. 0	40. 0
22 Sextantis	10 11 50. 01	11	+0. 19	+32. 94	46 29 11. 8	40. 8
30 H. Camelopardalis.	10 17 49. 24	8	+0. 28	[+32. 61]	315 50	....
δ Crateris...........	11 13 30. 91	6	+0. 22	+32. 82	53 9 9. 4	40. 0
γ Crateris...........	11 19 3. 55	11	+0. 23	+32. 89	56 2 57. 8	39. 1

h s
8. 010............*dt*..................... +32. 928
Hourly rate....:...... — 0. 0229

° ′ ″
Adopted Equator Point.........38 56 39. 97

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 45	29. 765	51. 1	49. 5
8 32	29. 785	49. 6	48. 2
9 6	29. 785	48. 8	47. 4
9 51	29. 815	47. 9	47. 0
10 31	29. 765	47. 2	46. 2
11 26	29. 815	45. 3	44. 3

Note.
71, δ Crateris, γ Crateris. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					D = Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	+0.218	7 30	......	......	+15.749	+15.616	+15.483	.....	.....	−5.35	−5.63	−5.91
54	0.223	8 0	......	+15.852	15.731	15.607	15.482	.....	−5.98	6.25	6.53	6.79
55	0.228	8 30	......	15.859	15.748	15.638	15.523	.....	6.90	7.16	7.42	7.68
56	0.233	9 0	......	15.901	15.803	15.704	15.603	.....	7.83	8.08	8.33	8.56
57	+0.239	9 30	......	15.975	15.893	15.809	15.722	.....	8.77	9.00	9.21	9.43
		10 0	+16.148	16.082	16.015	15.947	15.878	−9.47	9.68	9.88	10.08	10.27
		10 30	+16.269	+16.220	16.169	16.119	16.068	−10.38	−10.55	10.72	10.88	11.04
		11 0	......	......	+16.353	+16.321	+16.288	.....	.....	−11.50	−11.64	−11.77

APPARENT RIGHT ASCENSION.	R					
	53°	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″	″
7 30	76.51	79.34	82.30	85.43	88.70	90.41
8 0	76.68	79.52	82.49	85.62	88.90	90.62
8 30	76.84	79.69	82.66	85.80	89.08	90.80
9 0	76.97	79.82	82.79	85.94	89.23	90.95
9 30	77.06	79.91	82.89	86.04	89.33	91.05
10 0	77.11	79.96	82.95	86.10	89.39	91.12
10 30	77.13	79.98	82.97	86.12	89.41	91.14
11 0	77.34	80.20	83.20	86.36	89.66	91.39

1894 APRIL 13. ZONE 38. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	......	58.1	59.9	1.8	3.8	6.0	a	25 31.57	55 26 10.0	4.2	I A	43.280	8 26 25.56	−16 40 10.59	−16 2485
2	......	16.3	18.2	20.1	22.1	24.4	a	25 49.87	55 26 "	"	I (A)	43.040	8 26 43.86	16 40 6.15	16 2488
3	......	55.7	57.7	59.7	1.6	3.8	a	26 29.33	55 26 "	"	I B	39.990	8 27 23.34	16 32 42.88	16 2493
4	......	50.0	51.8	53.7	55.7	57.9	a	27 23.33	54 34 10.0	5.5	I	43.410	8 28 17.42	15 44 58.24	15 2485
5	......	48.0	50.1	52.3	54.6	56.8	c	27 52.37	55 28 10.0	4.1	V	44.160	8 28 46.37	16 39 18.52	16 2504
6	......	24.6	26.9	29.1	31.2	33.2	c	28 29.01	55 28 "	"	V B	49.420	8 29 23.01	16 37 46.51	16 2507
7	9.0	20.0	21.7	23.6	25.6	27.8	a	33 53.45	55 52 10.0	4.0	I	45.340	8 34 47.40	17 3 40.91	16 2538
8	9.0	21.9	23.7	25.7	27.7	29.9	a	34 55.50	55 52 "	"	I A	42.895	8 35 49.45	17 6 7.98	16 2547
9	......	46.3	48.0	50.1	52.0	54.4	a	46 19.90	56 2 10.0	4.8	I	46.260	8 47 13.84	17 14 3.90	17 2675
10	8.0	14.6	16.5	18.3	20.5	22.8	a	46 48.45	57 2 10.0	5.3	I	46.980	8 47 42.30	−18 14 21.06	−18 2506
11	8.9	5.9	7.8	10.0	12.3	14.4	c	47 10.09	53 56 10.0	3.2	III	46.660	8 48 4.24	−15 8 7.04	−14 2689
12	8.1	46.7	48.7	50.6	52.5	54.6	a	51 20.42	56 26 10.0	4.2	I	48.950	8 52 14.33	17 38 57.77	17 2696
13	8.3	23.6	25.4	27.2	29.3	31.5	a	51 57.21	56 26 "	"	I	50.690	8 52 51.12	17 39 31.09	17 2700
14	7.9	47.8	49.8	51.7	53.6	56.0	a	53 21.27	54 24 10.0	4.0	I	45.630	8 54 15.37	15 35 49.41	15 2658
15	9.3	20.6	22.5	24.4	26.4	28.7	a	55 54.20	55 40 10.0	4.0	I	44.670	8 56 48.19	16 51 35.54	16 2664
16	9.1	2.1	3.9	6.0	8.0	10.1	a	58 35.69	55 36 10.0	4.1	I	43.380	8 59 29.70	16 47 11.79	16 2676
17	8.0	31.2	33.0	35.0	37.1	39.1	a	3 4.76	55 38 10.0	4.0	I	48.910	9 3 58.76	16 50 58.62	16 2691
18	9.2	26.3	27.9	29.8	31.8	34.0	a	26 59.48	54 38 10.0	4.1	I	42.620	9 27 53.62	15 49 3.64	15 2826
19	8.9	3.1	5.2	7.4	9.7	11.9	c	27 7.47	56 6 10.0	4.2	III	43.720	9 28 1.48	17 17 30.67	17 2893
20	9.0	22.1	24.3	26.3	28.1	30.2	e	27 56.44	55 42 10.0	4.6	VII A	39.850	9 28 50.49	[−16 55 32.21]	−16 2824
21	8.8	20.3	22.5	24.6	26.9	29.0	c	34 24.67	55 34 10.0	4.6	V B	44.700	9 35 18.75	−16 42 39.31	−16 2851
22	9.0	53.7	56.0	57.9	59.8	2.0	e	34 28.14	55 34 "	"	VII A	40.820	9 35 22.21	16 47 52.16	16 2852
23	8.9	54.1	56.2	58.5	0.7	2.7	c	35 58.45	56 14 10.0	4.7	III	44.340	9 36 52.48	17 25 45.65	17 2934
24	9.1	2.5	4.3	6.3	8.4	10.6	a	46 36.16	56 4 10.0	4.6	I	43.370	9 47 30.23	17 15 27.68	17 2985
25	9.2	30.0	31.8	33.9	35.8	38.0	a	47 3.70	56 26 10.0	4.6	I	43.360	9 47 57.75	17 37 28.68	17 2991
26	7.9	11.3	13.0	15.1	17.0	19.1	a	47 44.87	56 16 10.0	5.1	I	42.870	9 48 38.93	−17 27 19.29	−17 2994

1894 APRIL 13. ZONE 39. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
27	8.8	29.9	32.1	34.0	36.0	37.9	e	20 4.06	56	44	10.0	3.9	V	43.240	10 20 58.24	−17 55 37.96	−17 3145
28	8.9	16.5	18.5	20.4	22.4	24.6	a	23 50.30	56	32	10.0	4.1	I	44.400	10 24 44.49	17 43 56.79	17 3161
29	8.6	14.1	15.9	17.8	19.6	21.9	a	25 47.49	55	22	10.0	4.0	I	44.000	10 26 41.75	16 33 46.00	16 3075
30	9.3	52.3	54.1	56.1	58.0	0.3	a	30 25.52	53	32	10.0	3.6	III	42.770	10 31 19.88	14 43 19.97	14 3149
31	9.0	42.9	45.0	47.1	49.4	51.6	c	30 47.21	56	24	10.0	3.8	V A	37.480	10 31 41.44	17 37 2.22	17 3191
32	5.	15.1	16.6	18.7	20.6	22.9	a	32 48.38	55	10	10.0	3.9	I	42.970	10 33 42.68	16 21 27.03	16 3100
33	9.4	0.7	2.6	4.9	7.1	9.3	c	33 4.93	54	14	10.0	3.8	V	42.940	10 33 59.26	15 25 27.29	15 3096
34	9.0	24.1	26.2	28.5	30.6	32.8	c	34 28.45	57	4	10.0	4.5	III	44.530	10 35 22.68	18 16 4.87	18 2995
35	9.2	54.5	56.6	58.7	0.9	3.1	c	34 58.77	57	4	“	“	III B	45.380	10 35 53.00	18 13 8.80	17 3211
36	8.9	51.4	53.3	55.2	57.3	59.4	a	36 24.99	55	36	10.0	4.0	I	44.045	10 37 19.29	−16 47 49.41	−16 3108
37	9.0	52.6	54.9	57.0	58.8	0.8	e	36 27.09	55	28	10.0	3.6	V A	(46).070	10 37 21.39	−16 43 43.83	−16 3109
38	9.5	27.1	29.1	31.2	34.0	35.9	c	37 31.47	55	28	“	“	III B	46.070	10 38 25.78	16 37 17.05	16 3114
39	9.3	45.1	47.2	51.7	53.1	56.0	c_4 d_3	37 43.04	55	28	“	“	VI	44.110	10 38 37.35	16 39 54.45	16 3115
40	9.0	30.6	32.6	34.4	36.4	38.6	a	40 4.15	55	22	10.0	3.6	I	46.080	10 40 58.48	16 34 27.84	16 3122
41	8.7	7.0	9.1	11.4	13.5	15.6	c	40 11.33	55	0	10.0	3.4	V	46.270	10 41 5.67	16 12 33.77	15 3123
42	9.4	23.6	25.8	27.7	29.9	32.0	c	41 27.81	53	54	10.0	3.1	III	41.960	10 42 22.20	15 5 7.09	14 3182
43	8.3	43.1	45.1	47.3	49.5	51.7	c	41 47.35	53	54	“	“	V	44.320	10 42 41.74	15 5 53.68	14 3184
44	9.1	13.1	15.6	17.3	19.1	21.0	e	41 47.73	53	54	“	“	VII	42.600	10 42 42.12	15 5 22.40	14 3187
45	......	42.8	44.8	47.0	49.2	51.3	c	43 47.03	54	28	10.0	2.9	V	45.315	10 44 41.39	15 40 14.37	15 3138
46	9.3	34.9	36.9	39.2	41.4	43.5	c	44 39.19	56	20	10.0	3.4	V	43.215	10 45 33.49	−17 31 40.24	−17 3244
47	9.4	43.0	45.2	47.3	49.6	51.6	c	45 47.35	56	20	“	“	III B	43.740	10 46 41.66	−17 28 37.27	−17 3247
48	9.0	39.8	42.0	44.1	46.4	48.5	c	46 44.17	56	54	10.0	3.8	III	45.320	10 47 38.47	18 6 20.96	17 3252
49	8.9	35.0	37.1	39.1	41.4	43.6	c	47 39.25	54	6	10.0	2.6	III	42.735	10 48 33.65	15 17 23.00	15 3155
50	9.0	37.7	39.5	41.4	43.5	45.6	a	50 10.88	53	14	10.0	2.6	I A	47.500	10 51 5.32	14 30 3.15	14 3226
51	8.4	24.1	25.8	27.9	29.9	32.0	a	50 57.26	53	14	“	“	I B	42.100	10 51 51.71	14 21 55.00	14 3230
52	8.9	59.6	1.7	3.8	6.1	8.2	c	51 3.89	56	46	10.0	4.6	V	42.570	10 51 58.22	17 57 30.81	17 3261
53	8.0	52.5	54.3	56.2	58.2	0.3	a	53 26.01	55	54	10.0	3.9	I	42.040	10 54 20.38	17 5 14.53	16 3163
54	8.8	14.0	16.0	17.8	19.8	22.0	a	55 47.58	55	42	10.0	3.8	I B	38.240	10 56 41.97	16 48 49.60	16 3174
55	9.0	4.3	6.1	8.2	10.0	12.4	a	56 37.89	55	42	“	“	I A	45.060	10 57 32.28	16 57 25.01	16 3175
56	9.3	54.3	56.1	58.1	0.0	2.3	a	57 27.84	55	42	“	“	I	44.750	10 58 22.24	−16 54 5.97	−16 3179
57	9.6	24.9	27.1	28.8	30.8	33.0	a	0 58.84	57	8	10.0	4.8	I	43.640	11 1 53.23	−18 19 50.21	−18 3104
58	9.4	17.9	20.2	22.3	24.5	26.7	c	1 22.33	56	38	10.0	4.5	V	44.950	11 2 16.72	17 50 16.91	17 3303
59	9.0	10.8	12.6	14.7	16.8	18.8	a	6 44.50	56	6	10.0	4.6	IV A	43.880	11 7 38.93	17 21 7.76	17 3322
60	9.1	48.6	50.7	52.8	55.1	57.3	c	6 52.91	56	6	“	“	III B	44.310	11 7 47.35	17 14 49.74	17 3324
61	8.9	30.9	33.2	35.5	37.5	39.7	c	7 35.37	53	30	10.0	3.0	V	49.050	11 8 29.87	14 43 25.74	14 3286
62	9.2	4.5	6.8	8.7	10.5	12.4	e	7 39.15	53	30	“	“	VII B	42.970	11 8 33.65	14 38 19.02	14 3287
63	9.0	38.7	40.9	42.8	44.7	46.7	e	9 13.34	53	24	10.0	3.2	VII	44.740	11 10 7.85	14 36 5.13	14 3295
64	8.8	40.8	42.4	44.5	46.4	48.5	a	11 13.86	53	20	10.0	2.6	I	46.490	11 12 8.39	14 32 33.28	14 3297
65	9.0	32.5	34.4	36.2	38.1	40.3	a	12 5.74	54	4	10.0	2.8	I	46.330	11 13 0.25	15 16 32.38	15 3236
66	8.8	44.8	46.7	48.8	50.8	52.9	a	13 18.30	54	30	10.0	3.1	I	44.300	11 14 12.80	−15 41 55.18	−15 3241
67	8.7	16.7	18.4	20.5	22.4	24.7	a	13 50.04	54	30	“	“	I	41.750	11 14 44.54	−15 41 6.66	−15 3242
68	9.0	52.5	54.6	56.8	59.0	1.3	c	13 56.85	56	10	10.0	4.5	V	42.390	11 14 51.32	17 21 27.96	17 3353
69	9.2	14.4	16.1	18.1	20.0	22.4	a	16 47.86	55	34	10.0	4.1	I	43.900	11 17 42.37	16 45 51.45	16 3237
70	8.8	35.6	37.2	40.0	55.3	57.2	d_1 e_3	22 27.12	56	36	10.0	4.1	VI	49.260	11 23 21.64	17 49 41.30	17 3391
71	9.3	37.4	39.4	41.5	43.8	46.0	c	23 41.63	56	36	“	“	III B	41.910	11 24 36.16	17 44 6.74	17 3394
72	8.8	12.8	15.2	17.0	19.0	20.9	e	23 47.07	56	36	“	“	VII A	45.310	11 24 41.60	[17 51 39.74]	17 3396
73	9.0	55.1	57.4	59.3	1.2	3.2	e	24 29.79	53	34	10.0	3.7	VII	45.250	11 25 24.36	14 46 16.70	14 3338
74	8.6	12.9	14.5	16.5	18.4	20.6	a	26 46.14	54	52	10.0	3.2	III	46.520	11 27 40.71	16 4 41.33	15 3291
75	9.1	31.9	33.8	35.6	37.7	39.9	a	28 5.06	52	54	10.0	3.4	I	45.440	11 28 59.66	14 6 13.70	13 3397
76	9.4	21.1	23.1	25.3	27.5	29.6	c	28 25.33	55	20	10.0	4.5	III	48.530	11 29 19.91	−16 33 21.71	−16 3280
77	9.5	44.1	46.2	48.6	50.7	52.7	c	28 48.47	55	20	“	“	V A	43.530	11 29 43.05	−16 35 1.15	−16 3281
78	9.0	41.0	43.0	45.2	47.4	49.5	c	29 45.23	54	2	10.0	3.3	V	46.830	11 30 39.82	15 14 46.69	14 3355
79	7.5	28.0	30.3	32.5	34.6	36.8	c	30 32.45	55	6	10.0	3.1	V	43.140	11 31 27.05	16 17 39.43	16 3290
80	8.8	40.0	42.2	44.3	46.5	48.6	c	31 44.33	52	54	10.0	3.0	III	47.290	11 32 38.95	14 6 50.68	13 3412
81	8.2	42.6	44.6	46.9	48.9	51.0	c	32 46.81	53	18	10.0	3.1	III	47.280	11 33 41.42	[14 30 51.64]	14 3370
82	8.4	57.8	0.0	2.2	4.4	6.6	c	33 2.21	53	18	“	“	VI B	50.260	11 33 56.82	14 28 38.36	14 3371
83	9.4	48.8	50.9	53.1	55.2	57.6	c	34 53.13	53	38	10.0	2.8	V	43.650	11 35 47.75	14 49 45.03	14 3378
84	9.4	20.5	22.8	24.8	26.5	28.6	e	34 55.19	53	38	“	“	VII B	50.020	11 35 49.81	14 48 35.28	14 3379
85	9.0	42.6	45.0	46.9	48.7	50.7	e	36 17.27	53	58	10.0	2.4	VII	45.700	11 37 11.89	15 10 26.28	14 3382
86	8.9	33.4	35.8	37.8	39.5	41.5	e	37 7.88	55	26	10.0	2.8	VII	44.125	11 38 2.51	−16 38 0.76	−16 3310
87	8.8	6.1	8.0	10.2	12.6	14.9	c	38 10.37	55	26	“	“	V B	43.790	11 39 5.01	−16 34 40.59	−16 3315
88	9.2	3.9	6.1	8.4	10.6	12.6	c	39 8.33	57	8	10.0	4.0	V	44.310	11 40 2.97	18 20 8.84	18 3229
89	9.4	20.3	22.1	24.1	26.0	28.1	a	40 54.04	57	8	“	“	I	48.230	11 41 48.69	[18 21 20.05]	18 3239
90	9.0	52.8	54.5	56.6	58.4	0.7	a	41 26.52	57	8	“	“	I A	42.130	11 42 21.18	18 22 37.18	18 3240
91	8.0	48.9	51.1	53.3	55.4	57.6	c	41 53.27	53	44	10.0	3.8	III B	49.420	11 42 47.93	14 54 21.90	14 3406
92	9.0	18.1	20.1	22.0	24.0	26.4	a	42 51.52	53	44	“	“	III A	46.130	11 43 46.17	14 59 44.73	14 3414
93	8.8	36.3	38.5	40.7	42.9	44.9	c	43 40.67	53	40	10.0	3.4	III	44.550	11 44 35.33	14 52 1.18	14 3415
94	7.9	17.1	18.9	21.0	22.9	25.0	a	44 50.36	53	40	“	“	I B	48.230	11 45 45.03	14 49 57.18	14 3418
95	9.1	11.9	13.8	15.7	17.6	19.8	a	45 45.29	54	38	10.0	3.2	I	48.150	11 46 39.96	15 51 10.54	15 3369
96	8.2	12.5	14.3	16.2	18.2	20.2	a	46 45.59	53	4	10.0	2.9	I	48.070	11 47 40.27	−14 17 4.53	−14 3424

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
97	9.0	14.7	16.6	18.6	20.3	22.5	a	47 47.85	53 4 10.0	2.9	I	48.820	11 48 42.54	−14 17 18.82	−14 3429
98	9.1	3.9	6.0	7.8	9.7	12.0	a	48 37.50	55 22 10.0	3.1	III B	42.290	11 49 32.20	16 30 10.65	16 3352
99	5.0	26.8	28.8	30.6	32.5	34.6	a	50 0.29	55 22 "	"	I A	39.340	11 50 55.00	16 35 38.21	16 3358
100	9.1	11.4	13.6	15.8	18.0	20.0	c	50 15.77	53 44 10.0	2.8	V	46.080	11 51 10.47	14 56 31.88	14 3435
101	9.1	5.5	7.6	9.7	12.0	14.2	c	51 9.81	53 44 "	"	III B	48.670	11 52 4.52	14 54 7.24	14 3436
102	8.6	19.5	21.4	23.6	25.7	27.9	c	53 23.63	54 18 10.0	3.6	III	43.290	11 54 18.34	15 29 39.14	15 3396
103	8.9	7.6	9.7	11.9	14.0	16.1	c	54 11.87	53 44 10.0	3.1	III B	42.440	11 55 6.59	14 52 8.79	14 3442
104	9.2	50.0	51.7	53.8	55.9	58.0	a	55 23.28	53 44 "	"	I A	41.470	11 56 18.01	14 58 14.04	14 3448
105	9.4	33.7	35.6	37.4	39.5	41.8	a	56 7.01	53 56 10.0	3.1	III	47.620	11 57 1.74	15 9 0.23	14 3451
106	9.7	12.0	13.9	16.1	18.2	20.6	c	57 16.17	54 58 10.0	3.2	V	46.100	11 58 10.92	−16 10 35.96	−15 3406
107	9.3	4.6	6.8	9.0	10.8	13.0	e	57 39.21	54 58 "	"	V B	38.540	11 58 33.97	−16 4 59.65	−15 3407
108	......	34.6	36.7	38.7	41.1	43.2	c	58 38.87	54 58 "	"	VII	41.700	11 59 33.63	16 9 13.63	15 3409
109	8.7	39.7	41.7	43.8	46.0	48.5	c	0 43.95	56 12 10.0	3.9	V	47.890	12 1 38.74	17 25 14.14	17 3553
110	8.0	50.6	52.8	54.6	56.6	58.5	e	1 24.74	56 26 10.0	4.1	VII	44.070	12 2 19.53	17 38 3.68	17 3557
111	8.6	40.6	42.4	44.9	47.0	49.2	c	2 44.83	55 24 10.0	4.2	V	43.630	12 3 39.62	16 35 50.66	16 3396
112	9.0	44.9	47.0	49.1	51.5	53.6	c	3 49.23	55 24 "	"	V B	41.050	12 4 44.02	16 31 49.12	16 3401
113	8.7	21.5	23.6	25.8	28.1	30.2	c	4 25.85	55 24 "	"	V A	44.100	12 5 20.65	16 39 12.56	16 3405
114	8.9	25.7	28.0	30.0	31.8	33.7	e	8 0.04	56 0 10.0	4.2	VII	44.350	12 8 54.87	17 12 7.50	16 3418
115	9.1	33.7	35.9	37.8	39.7	41.6	e	11 8.30	53 28 10.0	2.4	V	46 980	12 12 3.11	14 40 47.65	14 3484
116	9.3	15.4	17.6	19.6	22.0	24.0	c	12 19.73	54 4 10.0	2.6	V	42.110	12 13 14.55	−15 15 16.68	−15 3449
117	8.9	50.3	52.4	54.7	56.8	59.0	c	12 54.65	54 4 "	"	V B	47.970	12 13 49.47	−15 13 55.82	−14 3489

Reduction Elements. Zones 38 and 39.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 13.3....	+0.280	−0.109	+0.174	+0.260	−0.104	+0.161
13.5....	+0.239	−0.098	+0.148			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 16304		Bradley 1212		Lalande 17333		Piazzi IX. 13		υ^2 Hydrae		λ Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	51 6 6.95		46 28 6.95		57 12 7.75		58 8 7.05		51 22 6.85		50 40 6.95	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......		5 46.70		4 36.62	44.290	5 19.54	46.370	5 48.42	48.025	6 31.29	44.270	5 18.70
II Red. to Mer......		1.69		1.72	.240	1.63	.300	1.62	.060	1.69	.210	1.69
VI Inclination	45.630	2.04	41.960	2.04	.140		.140		47.890		.080	
VII Refraction.......	.590	1 11.3	.890	1 0.6	.060	1 29.2	.095	1 32.6	.840	1 12.3	43.990	1 10.5

	22 Sextantis		44 Hydrae		γ Crateris		κ Crateris		γ Corvi		Piazzi XII. 54	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	46 22 6.90		62 2 7.00		55 56 6.85		50 36 7.10		55 46 6.90		51 48 6.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.560	6 1.06	42.820	4 50.90	44.550	5 24.36	46.360	5 58.87	48.030	6 30.46	46.910	6 8.92
II Red. to Mer......	.500	1.73	.770	1.57	.530	1.64	.320	1.69	47.985	1.64	.840	1.68
VI Inclination	.140		.575		.350		.170		.820		.730	
VII Refraction.......	.260	1 0.7	.540	1 48.7	.310	1 25.8	.150	1 10.8	.805	1 25.7	.630	1 14.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 16304.....	8 12 44.50	7	+0.33	+37.96	51 13 8.7	38.4
Bradley 1212......	8 29 40.41	11	+0.31	+37.93	46 33 47.9	39.7
Lalande 17333.....	8 41 18.22	11	+0.36	+37.83	57 18 58.1	38.5
Piazzi IX. 13	9 6 30.20	11	+0.36	+37.77	58 15 39.7	37.8
1 H. Draconis	9 21 27.93	11	+0.52	[+37.75]	317 8	....
Groombridge 1586.	9 48 21.31	8	+0.29	[+37.75]	325 32	....
υ^2 Hydrae	9 59 20.96	11	+0.33	+37.69	51 29 52.1	39.9
λ Hydrae..........	10 4 48.38	11	+0.32	+37.76	50 46 37.8	39.4
22 Sextantis	10 11 45.03	11	+0.31	+37.75	46 29 10.4	39.0
44 Hydrae..........	10 28 21.59	11	+0.38	+37.67	62 8 48.2	38.9
γ Crateris..........	11 18 58.68	11	+0.35	+37.63	56 2 58.6	39.0
κ Crateris..........	11 21 12.71	11	+0.33	+37.66	50 43 18.5	39.0
4 H. Draconis	12 6 45.03	8	+0.38	[+37.73]	320 44	....
γ Corvi	12 9 44.91	11	+0.35	+37.67	55 54 4.7	38.8
Piazzi XII. 54	12 14 50.94	11	+0.33	+37.75	51 55 31.3	38.1

h s
8.000............*dt* .... +37.878
Hourly rate .... − 0.0602

° ′ ″
Adopted Equator Point...........38 56 38.88

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
8 15	29.745	52.5	....
8 50	29.735	51.2	52.0
9 30	29.745	50.4	51.3
10 10	29.755	50.0	50.4
11 3	29.745	48.2	48.5
11 50	29.735	47.1	46.7
12 15	29.735	46.5	45.6

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	+0.331	8 0	......	......	+15.963	+15.844	+15.721	+15.597
53	0.336	8 30	......	+16.071	15.962	15.852	15.743	15.630
54	0.341	9 0	......	16.088	15.993	15.897	15.799	15.700
55	0.346	9 30	......	......	16.053	15.972	15.889	15.803
56	0.351	10 0	......	......	16.143	16.077	16.011	15.943
57	+0.356	10 30	......	16.310	16.262	16.213	16.163	16.113
		11 0	+16.467	16.437	16.405	16.374	16.343	16.311
		11 30	16.597	16.586	16.572	16.561	16.548	16.534
		12 0	+16.748	16.754	16.761	16.767	16.773	16.778
		12 30	......	+16.941	+16.964	+16.990	+17.015	+17.039

APPARENT RIGHT ASCENSION.	$D =$ Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
8 0	.....	.....	−6.17	−6.46	−6.74	−7.02	74.68	77.43	80.30	83.33	86.50	89.85
8 30	.....	−6.95	7.24	7.51	7.78	8.06	74.75	77.50	80.37	83.41	86.58	89.93
9 0	.....	8.03	8.30	8.57	8.84	9.10	74.82	77.57	80.45	83.48	86.66	90.01
9 30	.....	.....	9.34	9.59	9.84	10.08	74.92	77.68	80.56	83.60	86.78	90.14
10 0	.....	.....	10.35	10.58	10.80	11.03	75.02	77.79	80.67	83.71	86.90	90.26
10 30	.....	11.09	11.29	11.50	11.70	11.90	75.16	77.93	80.82	83.87	87.06	90.43
11 0	−11.81	12.00	12.18	12.35	12.53	12.69	75.32	78.09	80.98	84.04	87.24	90.62
11 30	12.69	12.84	12.98	13.12	13.26	13.40	75.49	78.27	81.17	84.24	87.44	90.82
12 0	−13.45	13.56	13.68	13.79	13.89	13.99	75.67	78.45	81.36	84.43	87.64	91.03
12 30	.....	−14.20	−14.27	−14.33	−14.40	−14.46	75.84	78.63	81.55	84.63	87.84	91.24

1894 APRIL 16. ZONE 40. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.		CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0			δ 1900.0			B. D.	
		s	s	s	s	s		m	s	°	′	″	″		r	h	m	s	°	′	″	°	
1	8.9	15.3	17.1	19.1	21.1	23.3	a	28	49.09	57	6	10.0	3.5	I	46.730	9	29	44.34	−18	18	25.20	−18	2722
2	8.0	27.3	29.2	31.0	33.1	35.2	a	33	0.59	54	0	10.0	1.4	I	47.000	10	33	56.31	15	12	35.46	14	3156
3	8.5	22.3	24.4	26.6	28.7	30.9	c	33	26.59	56	42	10.0	3.0	III	48.650	10	34	22.19	17	55	17.26	17	3203
4	8.9	52.2	54.0	56.0	57.9	0.1	a	36	25.70	55	32	10.0	2.0	I	43.980	10	37	21.37	16	43	43.07	16	3109
5	9.1	9.2	11.0	13.0	15.0	17.0	a	40	42.82	56	22	10.0	3.1	I B	46.270	10	41	38.49	17	31	18.05	17	3225
6	9.0	54.4	56.1	58.2	0.2	2.3	a	41	28.04	56	22	"	"	I A	45.670	10	42	23.71	17	37	32.25	17	3230
7	8.7	56.8	58.6	0.6	2.3	4.7	a	44	29.93	53	14	10.0	1.6	I	49.880	10	45	25.73	14	27	30.15	14	3198
8	8.6	54.0	56.1	58.3	0.4	2.6	c	44	58.29	54	54	10.0	1.8	III	42.850	10	45	54.03	16	5	22.76	15	3140
9	8.6	44.8	47.0	49.1	51.0	52.9	e	45	19.19	55	46	10.0	1.5	VII	42.615	10	46	14.90	16	57	23.73	16	3136
10	7.8	44.8	47.0	49.2	51.4	53.6	c	46	49.21	54	52	10.0	1.4	III	42.995	10	47	44.96	−16	3	25.48	−15	3150
11	9.0	28.3	30.7	32.4	34.4	36.2	e	47	2.85	54	20	10.0	1.3	VII	45.270	10	47	58.63	−15	32	10.37	−15	3151
12	9.3	15.7	17.4	19.5	21.5	23.6	a	50	49.31	56	16	10.0	2.6	I	44.560	10	51	45.04	17	27	58.64	17	3260
13	7.7	49.8	52.0	53.9	56.5	58.5	c	50	54.15	55	42	10.0	2.0	V	47.200	10	51	49.90	16	54	50.39	16	3152
14	8.9	41.1	43.0	44.9	46.9	49.0	a	56	14.52	54	44	10.0	1.4	I	44.950	10	57	10.33	15	56	1.72	15	3179
15	8.0	41.0	43.0	45.2	47.4	49.6	c	56	45.25	53	8	10.0	1.7	III	43.460	10	57	41.10	14	19	31.12	14	3247
16	8.0	7.1	8.8	10.8	12.7	15.0	a	0	40.17	52	58	10.0	1.6	I A	41.875	11	1	36.05	14	12	12.30	13	3300
17	8.5	22.0	23.7	25.7	27.7	29.9	a	1	55.08	52	58	"	"	I B	41.530	11	2	50.97	14	5	40.43	13	3308
18	8.8	48.8	50.6	52.6	54.3	56.7	a	6	22.29	55	42	10.0	2.0	I	48.670	11	7	18.13	16	55	16.70	16	3201
19	9.6	35.1	37.1	39.3	41.4	43.8	c	6	39.35	55	12	10.0	1.7	III	48.750	11	7	35.20	16	25	18.45	16	3203
20	7.8	14.9	17.0	19.2	21.4	23.5	c	7	19.21	56	24	10.0	3.0	V	47.290	11	8	15.05	−17	36	56.57	−17	3326
21	7.0	11.6	13.7	16.0	18.0	20.2	c	8	15.91	55	8	10.0	1.7	V	46.370	11	9	11.78	−16	20	34.75	−16	3210
22	9.4	58.1	0.0	2.0	4.0	6.1	a	11	31.95	57	4	10.0	3.1	I	45.500	11	12	27.80	18	16	21.53	18	3147
23	9.3	25.3	27.0	29.0	30.9	33.2	a	12	58.91	56	42	10.0	2.7	I (B)	38.330	11	13	54.78	17	48	51.53	17	3351
24	9.0	8.9	10.8	13.1	15.3	17.5	c	13	13.13	56	42	"	"	III A	46.520	11	14	9.00	17	57	54.71	17	3352
25	8.9	3.0	4.7	6.5	8.6	10.8	a	16	36.24	54	38	10.0	1.2	I	43.745	11	17	32.18	15	49	40.35	15	3254
26	7.9	35.5	37.4	39.2	41.2	43.5	a	17	8.91	54	52	10.0	1.8	III	42.650	11	18	4.84	16	3	22.32	15	3256
27	7.9	31.1	33.2	35.5	37.6	39.8	c	17	35.45	55	52	10.0	1.6	V	45.350	11	18	31.36	17	4	18.19	16	3238
28	5.0	23.6	25.4	27.4	29.4	31.7	a	18	57.22	55	52	"	"	I A	47.310	11	19	53.14	17	8	5.39	16	3244
29	8.2	49.0	50.7	52.7	54.7	56.8	a	20	22.56	56	20	10.0	3.0	I	46.670	11	21	18.49	17	32	42.17	17	3379
30	8.2	17.1	19.0	21.0	22.8	25.1	a	21	50.79	56	20	"	"	I A	47.420	11	22	46.76	−17	36	9.79	−17	3388

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
31	9.1	7.3	8.7	13.2	15.1	17.3	$b_2 c_3$	22 17.33	54 52 10.0	2.1	III	44.250	11 23 13.30	−16 3 53.27	−15 3273
32	7.6	50.3	52.5	54.6	56.8	59.0	c	22 54.65	54 52 “	“	III B	50.360	11 23 50.61	16 2 37.41	15 3275
33	8.0	50.2	51.6	55.9	58.1	0.5	$b_2 c_3$	24 0.30	56 4 10.0	2.1	III B	45.270	11 24 56.26	17 13 3.99	16 3262
34	8.2	28.3	30.6	32.5	34.4	36.5	e	24 2.64	56 4 “	“	V A	46.920	11 24 58.60	17 20 2.37	17 3398
35	9.0	51.1	53.4	55.3	57.4	59.5	e	24 25.54	56 4 “	“	VII B	44.100	11 25 21.50	17 12 44.67	16 3265
36	9.5	25.4	27.4	29.5	33.7	35.5	$c_3 d_2$	25 25.27	56 4 “	“	V B	47.220	11 26 21.24	17 13 42.76	16 3269
37	8.8	47.6	49.3	51.4	53.3	55.6	a	28 20.83	53 44 10.0	1.0	III	49.700	11 29 16.84	14 57 33.67	14 3349
38	9.1	34.3	36.3	38.4	40.8	43.0	c	28 38.57	53 44 “	“	III (A)	50.965	11 29 34.58	15 1 10.87	14 3350
39	9.6	33.0	34.7	36.7	38.7	40.8	a	30 6.18	53 44 “	“	I (A)	50.090	11 31 2.20	15 0 52.57	14 3358
40	9.5	40.0	41.9	44.3	46.4	48.5	c	30 44.23	57 12 10.7	3.8	III	47.230	11 31 40.22	−18 24 58.73	−18 3208
41	9.0	43.0	45.0	47.0	48.9	51.3	a	32 16.96	57 12 “	“	I B	49.040	11 33 12.96	−18 22 19.15	−18 3215
42	8.8	31.1	33.0	35.1	37.0	39.1	a	33 4.37	53 6 10.0	1.5	III	46.580	11 34 0.40	14 18 33.05	14 3372
43	9.1	19.0	21.1	23.3	25.6	27.7	c	33 23.35	53 6 “	“	III A	41.590	11 34 19.38	14 20 11.17	14 3375
44	9.3	6.2	8.2	10.0	12.0	14.3	a	34 39.97	56 38 10.0	2.8	III B	46.670	11 35 36.00	17 47 33.25	17 3441
45	9.5	2.8	4.5	6.6	8.6	10.8	a	35 36.50	56 38 “	“	I A	43.490	11 36 32.53	17 52 56.49	17 3444
46	8.9	40.7	42.7	45.0	47.2	49.4	c	36 45.01	56 46 10.0	2.6	III B	41.710	11 37 41.05	17 53 59.21	17 3449
47	9.0	21.8	23.6	25.6	27.5	29.8	a	37 55.53	56 46 “	“	I A	41.960	11 38 51.58	18 0 27.76	17 3455
48	8.5	4.8	6.6	8.4	10.4	12.7	a	39 38.06	54 20 10.0	1.5	I	42.710	11 40 34.13	15 31 21.10	15 3349
49	8.5	57.3	59.1	1.0	3.0	5.2	a	40 30.44	53 10 10.0	1.7	III	46.635	11 41 26.51	14 22 34.60	14 3402
50	8.6	6.6	8.1	10.2	12.1	14.3	a	42 39.59	53 14 10.0	1.7	I	47.900	11 43 35.67	-14 26 57.10	−14 3413
51	9.8	5.2	7.4	9.6	11.7	13.9	c	43 9.57	55 38 10.0	2.3	V	42.820	11 44 5.66	−16 49 30.88	−16 3332
52	6.0	13.9	16.0	18.2	20.2	22.4	c	44 18.15	54 6 10.0	1.8	III	46.200	11 45 14.25	15 18 28.96	15 3363
53	8.0	54.9	56.9	59.2	1.2	3.4	c	44 59.13	52 58 10.0	1.8	V	48.320	11 45 55.23	14 11 7.90	13 3455
54	9.0	52.7	55.0	56.8	58.7	0.7	(e)	45 27.22	54 22 10.0	1.9	VII	43.650	11 46 23.33	15 33 44.29	15 3368
55	8.9	28.1	30.0	31.8	33.8	36.0	a	47 1.45	54 32 10.0	1.1	III	45.410	11 47 57.63	15 44 14.80	15 3374
56	7.8	27.1	29.0	31.4	33.5	35.6	c	47 31.33	54 18 10.0	1.6	V (A)	45.380	11 48 27.45	15 33 28.43	15 3376
57	9.1	11.9	14.1	16.3	18.5	20.6	c	48 16.29	54 18 “	“	V B	49.960	11 49 12.41	15 28 30.27	15 3377
58	9.0	41.9	43.5	45.7	47.7	49.9	a	49 15.22	54 18 “	“	III	46.870	11 50 11.35	15 30 42.20	15 3381
59	8.9	26.9	28.9	31.3	33.3	35.4	c	49 31.17	54 18 “	“	V B	34.770	11 50 27.30	15 23 41.12	15 3382
60	9.2	35.1	37.5	39.3	40.9	43.4	e	50 9.51	55 30 10.0	2.3	VII(A)	37.460	11 51 5.65	−16 43 2.84	−16 3359
61	8.8	.....	14.0	16.1	20.3	22.0	$c_4 d_2$	51 11.86	54 42 10.0	1.5	V	43.970	11 52 8.00	−15 53 49.72	−15 3385
62	9.3	8.7	11.0	12.9	14.8	16.6	e	51 43.25	54 18 10.0	1.4	VII	47.030	11 52 39.40	15 30 48.23	15 3388
63	8.0	55.7	58.0	59.9	2.0	3.8	e	52 30.47	53 22 10.0	1.0	VII	43.235	11 53 26.61	14 33 33.26	14 3438
64	8.0	32.7	34.6	36.6	38.5	40.7	a	54 6.17	54 50 10.0	1.5	III	43.590	11 55 2.33	16 1 41.22	15 3399
65	8.1	8.4	10.5	12.7	14.8	17.1	c	54 12.71	54 50 “	“	V A	50.190	11 55 8.87	16 7 1.46	15 3400
66	8.9	34.0	36.2	38.5	40.5	42.7	c	55 38.39	57 2 10.0	3.0	III	44.490	11 56 34.58	18 14 5.79	17 3536
67	8.4	28.5	30.1	32.1	34.0	36.1	a	58 1.53	53 32 10.0	1.0	I	43.420	11 58 57.72	14 43 32.29	14 3454
68	8.7	37.0	39.1	41.3	43.5	45.7	c	58 41.33	56 4 10.0	2.2	III A	39.300	11 59 37.54	17 17 36.63	17 3546
69	8.7	35.6	37.6	39.8	42.0	44.1	c	59 39.83	54 46 10.0	1.0	III	44.010	12 0 36.04	15 57 48.70	15 3415
70	8.0	58.9	0.5	2.5	4.6	6.7	a	1 31.95	53 6 10.0	1.0	I	45.380	12 2 28.15	−14 18 8.36	−14 3460
71	9.1	47.9	50.1	52.1	54.5	56.5	c	1 52.23	55 10 10.0	1.7	III	45.280	12 2 48.46	−16 22 14.36	−16 3393
72	9.4	19.1	21.1	23.5	25.7	27.9	c	11 23.47	56 30 10.0	2.6	V	44.430	12 12 19.79	17 42 4.03	17 3592
73	9.5	22.2	24.5	26.5	28.3	30.3	e	11 56.36	57 8 10.0	2.7	VII	45.095	12 12 52.70	18 20 20.14	18 3362
74	9.6	16.9	18.9	20.9	23.3	25.6	c	13 21.13	57 8 “	“	V A	40.830	12 14 17.48	18 22 10.48	18 3365
75	8.3	12.2	14.6	16.6	18.9	20.9	c	14 16.65	53 4 10.0	0.6	V	46.620	12 15 12.93	14 16 34.61	14 3494
76	8.4	13.2	15.4	17.2	19.2	21.2	e	14 47.72	54 0 10.0	1.3	VII(A)	45,450	12 15 44.02	15 15 29.49	15 3452
77	7.0	7.2	9.1	11.3	13.5	15.6	c	16 11.35	53 48 10.0	0.6	V	44.700	12 17 7.66	14 59 59.94	14 3500
78	9.0	56.9	59.0	1.1	3.3	5.6	c	17 1.19	54 2 10.0	1.5	V A	40.750	12 17 57.51	15 15 58.78	15 3458
79	9.3	40.1	42.5	44.4	46.0	48.0	e	17 14.70	54 2 “	“	V B	41.390	12 18 11.02	15 9 45.57	14 3506
80	9.3	16.2	18.0	20.0	22.1	24.2	a	19 49.73	55 26 10.0	1.6	I B	41.030	12 20 46.09	−16 33 39.34	−16 3460
81	9.4	44.2	46.2	48.4	50.6	52.7	c	20 48.43	55 26 “	“	III B	42.440	12 21 44.80	−16 34 7.89	−16 3465
82	6.0	6.8	9.1	11.2	13.0	15.0	e	21 41.39	54 52 10.0	1.0	V	46.835	12 22 37.76	16 4 43.46	15 3471
83	9.0	11.1	12.9	14.9	16.7	18.9	a	25 44.19	52 58 10.0	1.0	I	45.120	12 26 40.53	14 10 1.82	13 3547
84	8.4	11.7	13.6	15.5	17.5	19.7	a	26 45.16	54 54 10.0	1.9	I	46.090	12 27 41.57	−16 6 26.02	−15 3497

Reduction Elements. Zone 40.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 16.3....	+0.197	−0.437	−0.174	+0.224	−0.424	−0.141
16.5....	+0.251	−0.412	−0.127			
			−0.122			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 16304		α Hydrae		λ Hydrae		μ Hydrae		44 Hydrae		ε Corvi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	51 6 8.80		47 2 5.60		50 40 6.20		55 8 5.70		62 2 5.50		60 52 5.85	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	45.910	5 50.49	45.290	5 38.32	44.470	5 23.10	43.625	5 6.64	43.100	4 56.27	43.015	4 54.68
II Red. to Mer.	.890	1.69	.245	1.72	.455	1.69	.585	1.65	.030	1.57	42.965	1.58
VI Inclination	.745		.080		.290		.440		42.860		.785	
VII Refraction	.690	1 9.8	.060	1 1.0	.260	1 9.6	.365	1 21.9	.840	1 47.3	.735	1 42.8

	γ Corvi		δ Corvi		β Corvi	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	55 46 5.80		54 46 5.55		61 38 5.90	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	48.330	6 35.68	43.175	4 58.44	45.435	5 41.17
II Red. to Mer	.270	1.64	.155	1.65	.405	1.57
VI Inclination	.075		.000		.220	
VII Refraction	.065	1 24.4	42.960	1 21.3	.215	1 46.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Bradley 1147	8 5 36.85	11	−0.12	[+39.66]	322 52	....
20 Navis	8 7 48.80	11	−0.14	+39.55	54 22	....
Lalande 16304	8 12 43.35	11	−0.16	+39.55	51 13 10.8	40.8
α Hydrae	9 21 44.40	11	−0.17	+39.52	47 8 46.6	42.0
λ Hydrae	10 4 47.05	11	−0.16	+39.54	50 46 40.6	42.0
μ Hydrae	10 20 19.66	11	−0.14	+39.54	55 14 35.9	41.6
9 H. Draconis	10 25 32.01	9	−0.12	[+39.51]	322 40	....
44 Hydrae	10 28 20.08	11	−0.11	+39.63	62 8 50.6	41.1
ε Corvi	12 4 2.48	11	−0.11	+39.60	60 58 44.9	41.5
4 H. Draconis	12 6 43.60	11	−0.07	[+39.49]	320 44	....
γ Corvi	12 9 43.50	11	−0.14	+39.56	55 54 7.5	41.4
δ Corvi	12 23 45.02	11	−0.14	+39.57	54 52 26.9	41.7
β Corvi	12 28 11.37	11	−0.11	+39.53	61 45 34.8	41.9

h		s
8.567	*dt*	+39.540
	Hourly rate	+ 0.0074
		° ′ ″
	Adopted Equator Point	38 56 41.56

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
8 4	29.815	64.8	65.3
9 4	29.835	60.7	62.0
10 7	29.835	59.2	58.3
10 30	29.845	58.3	57.4
11 28	29.835	56.7	56.0
12 30	29.825	55.5	54.2

Note.

28. Faint companion following.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					$D =$ Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	−0.148	9 30	......	+16.098	+16.017	+15.935	+15.850	.....	−9.35	−9.62	−9.88	−10.13
54	0.144	10 0	......	16.184	16.117	16.052	15.984	.....	10.41	10.65	10.89	11.12
55	0.140	10 30	+16.345	16.297	16.247	16.198	16.148	−11.19	11.41	11.63	11.84	12.05
56	0.136	11 0	16.464	16.432	16.402	16.371	16.339	12.12	12.31	12.51	12.69	12.88
57	−0.131	11 30	16.605	16.592	16.580	16.568	16.554	13.00	13.15	13.30	13.46	13.61
		12 0	16.765	16.771	16.779	16.785	16.790	13.75	13.88	14.00	14.11	14.24
		12 30	+16.944	+16.968	+16.993	+17.017	+17.042	−14.39	−14.48	−14.57	−14.64	−14.72

APPARENT RIGHT ASCENSION.	R					
	53°	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″	″
9 30	75.09	77.87	80.78	83.85	87.06	88.74
10 0	75.35	78.15	81.06	84.14	87.36	89.04
10 30	75.56	78.36	81.28	84.37	87.60	89.29
11 0	75.67	78.47	81.40	84.49	87.72	89.41
11 30	75.77	78.58	81.51	84.61	87.84	89.54
12 0	75.89	78.70	81.64	84.74	87.98	89.68
12 30	76.00	78.81	81.75	84.86	88.10	89.80

1894 APRIL 24. ZONE 41. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.3	28.9	30.7	32.6	34.7	36.9	a	41 2.61	56 44 10.0 3.0	I 45.000	10 42 0.31	−17 56 9.51	−17 3227
2	7.8	30.9	33.2	35.0	36.9	39.0	e	41 5.49	54 0 10.0 1.6	VII 45.590	10 42 3.29	15 12 17.15	14 3181
3	8.0	0.0	1.9	3.7	5.8	8.0	a	44 33.23	53 22 10.0 1.2	I 45.980	10 45 31.06	14 34 18.32	14 3199
4	7.9	40.9	42.7	44.6	46.5	48.8	a	45 14.53	56 36 10.5 3.5	III 44.780	10 46 12.25	17 48 7.88	17 3245
5	7.8	31.4	33.3	35.2	37.2	39.5	a	47 4.98	55 32 10.0 2.8	I 47.310	10 48 2.75	16 44 50.69	16 3142
6	9.1	31.8	33.6	35.6	37.5	39.8	a	51 5.47	56 32 10.0 2.9	I B 45.780	10 52 3.23	17 41 12.85	17 3262
7	9.0	57.0	58.8	0.8	2.9	5.0	a	51 30.72	56 32 " "	I 48.770	10 52 28.58	17 45 22.09	17 3264
8	8.5	35.8	37.8	40.0	42.3	44.4	c	51 40.07	56 32 " "	III 51.340	10 52 37.93	17 46 12.86	17 3265
9	9.0	4.0	5.8	7.7	9.6	11.8	a	6 37.20	53 58 10.0 1.2	I 43.760	11 7 35.10	15 9 40.20	14 3281
10	8.1	13.8	15.8	17.6	19.5	21.8	a	7 47.03	53 14 10.0 1.6	III 47.150	11 8 44.96	−14 26 45.94	−14 3288
11	8.0	8.4	10.5	14.6	16.2	19.0	c_4 d_3	8 6.23	53 42 10.0 1.7	VI 42.780	11 9 4.15	−14 53 25.40	−14 3289
12	8.6	10.8	12.5	14.6	16.6	18.8	a	16 44.15	54 24 10.0 1.5	I 48.010	11 17 42.08	15 37 3.25	15 3255
13	9.4	54.5	56.7	58.8	0.9	3.0	c	16 58.79	52 58 10.0 1.7	V 42.790	11 17 56.75	14 9 23.65	13 3357
14	9.1	42.6	44.4	46.3	48.2	50.4	a	23 15.72	53 22 10.0 1.4	I 43.605	11 24 13.70	14 33 37.03	14 3332
15	9.2	59.3	1.3	3.1	5.1	7.2	a	23 32.77	55 0 10.0 2.1	III 45.590	11 24 30.74	16 12 21.45	15 3278
16	8.0	54.1	56.1	58.6	0.6	2.7	c	23 58.43	56 0 10.0 3.5	V 47.425	11 24 56.38	17 13 1.68	16 3262
17	9.1	54.8	56.8	58.4	0.5	2.7	a	29 27.99	53 28 10.0 1.6	I B 39.620	11 30 26.00	14 35 9.62	14 3353
18	9.1	52.3	54.4	56.6	58.7	1.0	c	29 56.61	53 28 " "	III A 50.780	11 30 54.62	14 45 9.24	14 3357
19	7.9	31.0	33.0	34.8	36.8	39.0	a	32 4.72	56 26 10.4 4.0	I 45.260	11 33 2.72	17 38 19.17	17 3424
20	9.1	11.6	13.5	15.8	18.0	20.0	c	32 15.79	54 28 10.0 1.1	V 47.250	11 33 13.80	−15 40 53.09	−15 3315
21	8.0	33.9	36.0	38.3	40.3	42.5	c	32 38.21	54 28 " "	V B 50.710	11 33 36.22	−15 38 45.59	−15 3318
22	9.0	53.8	55.6	57.5	59.5	1.7	a	34 27.42	56 24 10.0 3.1	III 48.560	11 35 25.44	17 37 23.14	17 3439
23	8.8	48.2	50.1	52.1	54.1	56.4	a	37 21.74	54 56 10.0 1.5	I 43.390	11 38 19.79	16 7 37.85	15 3341
24	9.2	13.0	14.8	16.7	18.7	20.9	a	37 46.39	54 56 " "	I A 48.060	11 38 44.44	16 12 19.98	15 3343
25	9.0	52.9	54.9	56.7	58.7	0.8	a	38 26.35	54 56 " "	I B 40.140	11 39 24.40	16 3 23.75	15 3347
26	9.4	18.6	20.4	22.2	24.3	26.5	a	42 52.03	55 24 10.0 2.5	I 43.250	11 43 50.10	16 35 37.16	16 3330
27	9.5	2.0	3.8	5.8	7.6	9.9	a	43 35.45	55 24 " "	I 46.630	11 44 33.52	16 36 41.53	16 3334
28	9.1	15.0	17.1	19.1	21.0	23.1	a	43 48.68	55 24 " "	III B 36.400	11 44 46.75	16 30 16.28	16 3335
29	9.0	15.2	17.0	19.0	21.0	23.1	a	44 48.70	55 24 " "	III A 44.740	11 45 46.78	16 39 20.46	16 3338
30	8.0	33.3	35.6	37.7	40.0	42.1	c	45 37.75	56 24 10.0 2.5	V 47.210	11 46 35.83	−17 36 59.05	−17 3488
31	9.0	25.6	27.9	30.0	32.2	34.4	c	46 30.03	55 36 10.0 1.6	V B 47.540	11 47 28.12	−16 45 50.09	−16 3346
32	8.8	9.8	11.6	13.6	15.5	17.6	a	47 43.30	55 36 " "	I A 44.510	11 48 41.40	16 51 14.57	16 3350
33	9.1	29.6	31.4	33.3	35.3	37.5	a	50 2.70	52 54 10.0 1.4	I 48.660	11 51 0.80	14 7 12.75	13 3474
34	9.0	46.7	48.6	50.4	52.5	54.8	a	50 19.88	52 54 " "	III A 43.140	11 51 17.98	14 8 42.58	13 3476
35	9.0	21.0	23.1	25.1	27.3	29.3	c	50 25.17	52 54 " "	V (A) 43.140	11 51 23.27	14 8 44.08	13 3477
36	8.7	58.1	0.6	2.5	4.3	6.3	e	51 32.78	54 32 10.0 1.4	VII 43.480	11 52 30.90	15 43 43.43	15 3387
37	9.1	52.0	54.4	56.1	58.0	0.0	e	52 26.42	55 12 10.0 2.1	VII 43.910	11 53 24.55	16 23 53.89	16 3366
38	9.0	12.7	14.7	16.8	18.9	21.0	c	54 16.83	53 28 10.0 1.1	III 44.880	11 55 14.95	14 40 3.94	14 3443
39	9.1	25.1	27.2	31.7	33.1	35.8	c_4 d_3	54 23.07	53 28 " "	VII A 45.170	11 55 21.19	14 43 25.41	14 3444
40	8.0	27.8	29.6	31.5	33.4	35.6	a	57 1.11	54 42 10.0 1.7	I 44.385	11 57 59.26	−15 53 56.35	−15 3405
41	9.3	11.1	12.9	15.0	16.8	19.0	a	59 44.24	52 54 10.0 1.7	I 44.580	12 0 42.39	−14 5 55.14	−13 3487
42	9.0	19.6	21.4	23.2	25.2	27.4	a	1 53.05	55 44 10.0 1.6	I 45.575	12 2 51.24	16 56 21.89	16 3394
43	8.7	9.8	11.9	14.1	16.3	18.4	c	2 14.11	56 46 10.0 2.6	V A 44.730	12 3 12.31	18 1 25.95	17 3559
44	7.9	37.0	38.9	41.3	45.7	47.0	c_3 d_2	2 36.93	56 46 " "	VI B 37.500	12 3 35.13	17 52 43.60	17 3562
45	8.8	56.0	58.1	0.2	4.6	6.0	c_3 d_2	3 55.98	54 48 10.0 2.2	VI B (45).050	12 4 54.18	15 57 1.16	15 3425
46	9.5	49.3	51.6	53.5	55.3	57.4	e	4 23.79	54 48 " "	VII A 47.290	12 5 21.99	16 4 9.76	15 3427
47	8.9	15.7	17.9	20.0	24.2	26.0	c_3 d_2	6 15.74	55 26 10.0 3.1	V 48.150	12 7 13.96	16 39 14.10	16 3413
48	9.0	45.8	47.8	50.0	52.4	54.5	c	6 50.11	55 26 " "	V B 44.110	12 7 48.33	16 34 44.76	16 3415
49	9.6	39.6	41.8	44.0	46.0	48.1	c	7 43.91	54 16 10.0 2.0	V B 45.820	12 8 42.11	15 25 13.38	15 3435
50	9.5	16.8	19.0	21.0	23.0	25.1	c	8 20.99	54 16 " "	V A 46.620	12 9 19.20	−15 31 53.93	−15 3436
51	......	0.6	2.6	5.0	7.1	9.0	c	9 4.87	54 16	....	12 10 3.08	−15 22 56	−15 3437
52	8.0	15.8	17.6	19.7	21.6	23.8	a	13 49.04	53 18 9.0 0.5	III 46.040	12 14 47.25	14 30 24.17	14 3493
53	9.1	32.1	34.4	36.5	38.6	40.8	(c)	14 36.49	54 0 10.0 0.7	I 44.940	12 15 34.72	[15 12 3.85]	14 3495
54	7.8	13.5	15.3	17.2	19.2	21.4	a	16 46.60	52 58 10.0 1.4	III B 43.770	12 17 44.82	14 6 28.53	13 3528
55	9.2	56.7	58.9	1.1	3.2	5.4	c	17 1.07	52 58 " "	V A 47.630	12 17 59.29	14 14 8.88	13 3529
56	9.4	31.4	33.3	35.3	37.1	39.3	a	19 5.01	55 58 10.0 2.1	III 47.510	12 20 3.31	17 11 0.78	16 3456
57	7.7	18.1	19.8	21.8	23.9	26.0	a	19 51.24	53 10 10.0 1.2	III 49.750	12 20 49.48	14 23 34.89	14 3510
58	8.7	52.1	53.9	55.9	58.0	0.0	a	20 25.31	53 10 " "	III A 47.200	12 21 23.56	14 25 59.41	14 3515
59	9.0	49.4	51.3	53.1	55.2	57.3	a	21 22.56	53 10 " "	I B 41.700	12 22 20.81	14 17 47.53	14 3518
60	8.0	55.4	57.4	59.2	1.1	3.3	a	22 28.75	54 16 10.0 2.5	I 41.900	12 23 27.03	−15 27 7.14	15 3475
61	......	27.7	29.6	31.6	33.6	35.7	a	34 1.55	57 0 10.0 3.6	III A 43.620	12 34 59.99	−18 15 2.72	−18 3437
62	9.3	28.5	30.2	32.2	34.1	36.4	a	36 2.19	57 8 10.0 2.3	III B 45.690	12 37 0.66	18 17 16.27	18 3445
63	9.0	26.6	28.7	30.8	33.1	35.5	c	36 30.95	57 8 " "	III 41.770	12 37 29.42	18 19 13.93	18 3448
64	8.0	13.5	15.6	17.9	20.0	22.3	c	37 17.87	57 8 " "	III 42.020	12 38 16.34	18 19 18.62	18 3452
65	9.4	40.3	42.5	44.7	46.9	49.1	c	37 44.71	57 8 " "	V A 42.265	12 38 43.18	18 22 37.88	18 3453
66	8.7	14.2	16.2	18.4	20.6	22.7	c	39 18.43	53 46 10.0 1.8	V 43.625	12 40 16.80	14 57 40.19	14 3570
67	8.9	43.8	45.7	48.0	50.1	52.2	c	39 47.97	53 46 " "	V A 38.680	12 40 46.34	14 59 19.00	14 3572
68	......	1.0	2.7	4.8	6.8	9.0	a	43 34.20	53 18 10.0 1.0	V (A) 40.980	12 44 32.57	−14 32 0.66	−14 3587

Reduction Elements. Zone 41.

	OBSERVED.			ADOPTED.		
1894.	c	b	a	c	b	a
	s	s	s	s	s	s
April 24.3 . . .	−0. 267	−0. 269	−0. 061	+0. 251	−0. 272	−0. 061
24.5. . . .	+0. 235	−0. 276				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	λ Hydrae		μ Hydrae		φ Hydrae		δ Crateris		δ Corvi		β Corvi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	50 40 6. 60		55 8 6. 55		55 10 5. 20		53 2 6. 05		54 46 6. 05		61 38 6. 15	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq.		5 19. 89	43. 410	5 2. 96	43. 120	4 56. 77	45. 625	5 45. 27	43. 065	4 55. 90	45. 285	5 38. 49
II | Red. to Mer.	44. 300	1. 70	. 390	1. 65	. 070	1. 65	. 630	1. 67	. 010	1. 65	. 250	1. 57
VI | Inclination	. 180	0. 82	. 230		42. 885		. 470		42. 850		. 105	
VII | Refraction.	. 120	1 10. 4	. 210	1 22. 8	. 865	1 22. 9	. 415	1 16. 9	. 830	1 22. 0	. 070	1 47. 2

	Lalande 24277	
	° ′ ″	
CIRCLE READING.	58 50 6. 90	
	r	′ ″
I | Microm. Eq.	46. 520	6 1. 34
II | Red. to Mer.		1. 58
VI | Inclination	. 330	0. 54
VII | Refraction.	. 290	1 35. 8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
λ Hydrae	10 4 44. 92	11	+0. 03	+41. 39	50 46 39. 4	40. 6
μ Hydrae	10 20 17. 56	11	+0. 05	+41. 36	55 14 34. 0	39. 4
9 H. Draconis	10 25 29. 23	9	+0. 30	[+41. 35]	322 40	. . . .
φ Hydrae	10 32 44. 89	11	+0. 05	+41. 30	55 16 26. 5	39. 6
δ Crateris.	11 13 22. 52	11	+0. 04	+41. 30	53 9 9. 9	39. 3
δ Corvi	12 23 43. 09	11	+0. 05	+41. 30	54 52 25. 6	39. 8
β Corvi	12 28 9. 44	11	+0. 07	+41. 28	61 45 33. 4	39. 7
Lalande 24277	12 57 25. 92	8	+0. 06	+41. 31	58 57 46. 2	39. 9

h 10. 548. . . . .*dt* . . . . +41. 338 s
Hourly rate . . . . − 0. 0199
Adopted Equator Point. . . . . .38° 56′ 39″. 76

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
10 7	29. 845	53. 6	52. 6
10 36	29. 845	52. 8	52. 2
11 28	29. 855	51. 6	51. 1
12 26	29. 855	50. 6	50. 6
13 16	29. 865	50. 4	50. 3

Note.
51, 61, 68, Lalande 24277. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	+0. 037	10 30	. . . . . .	+16. 432	+16. 385	+16. 336	+16. 289	+16. 238
53	0. 040	11 0	. . . . . .	16. 533	16. 503	16. 472	16. 442	16. 410
54	0. 043	11 30	+16. 666	16. 655	16. 643	16. 631	16. 618	16. 606
55	0. 047	12 0	+16. 787	16. 793	16. 801	16. 807	16. 814	16. 819
56	0. 051	12 30	. . . . . .	16. 949	16. 973	16. 999	17. 022	17. 047
57	+0. 054	13 0	. . . . . .	+17. 117	+17. 159	+17. 202	+17. 244	+17. 285

APPARENT RIGHT ASCENSION.	$D =$ Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
10 30	. . . . .	−11. 49	−11. 74	−11. 99	−12. 24	−12. 48	74. 99	77. 75	80. 63	83. 68	86. 86	90. 22
11 0	. . . . .	12. 49	12. 72	12. 94	13. 16	13. 39	75. 11	77. 88	80. 76	83. 81	87. 00	90. 36
11 30	−13. 17	13. 38	13. 57	13. 77	13. 96	14. 15	75. 21	77. 98	80. 87	83. 93	87. 12	90. 49
12 0	−13. 96	14. 14	14. 31	14. 48	14. 63	14. 79	75. 27	78. 04	80. 93	83. 98	87. 18	90. 55
12 30	. . . . .	14. 78	14. 90	15. 04	15. 16	15. 29	75. 30	78. 07	80. 97	84. 02	87. 22	90. 59
13 0	. . . . .	−15. 28	−15. 37	−15. 46	−15. 55	−15 64	75. 34	78. 11	81. 00	84. 06	87. 26	90. 64

1894 APRIL 27. ZONE 42. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.0	16.9	18.8	20.8	22.7	24.9	a	16 50.37	54(44) 10.0 1.2	I A 41.550	17 17 50.98	−15 56 36.93	−15 4534
2	9.3	3.4	5.1	7.1	9.1	11.2	a	19 36.75	54 54 10.0 1.1	I ( ) (45).310	17 20 37.40	16 4 34.42	16 4514
3	9.0	44.2	46.1	48.0	50.1	52.1	a	20 17.65	54 54 “ “	I B 42.520	17 21 18.29	16 0 28.70	15 4553
4	9.2	44.2	46.1	48.1	52.6	54.0	c_3 d_2	20 44.05	52 46 10.0 1.1	III 46.760	17 21 44.40	13 56 56.67	13 4619
5	9.1	43.8	45.6	47.6	49.3	51.5	a	22 17.11	54 44 10.0 1.1	III A 44.910	17 23 17.75	15 57 39.92	15 4563
6	8.0	39.5	41.4	43.7	45.7	47.7	c	22 43.61	54 44 “ “	III A 43.640	17 23 44.25	15 57 15.52	15 4565
7	9.0	3.5	5.5	7.7	10.0	12.1	c	23 7.77	54 44 “ “	V 50.140	17 24 8.41	15 56 7.59	15 4567
8	9.3	59.1	1.5	3.5	5.6	7.7	c	24 3.49	54 44 “ “	V 45.270	17 25 4.13	15 54 34.40	15 4575
9	8.2	32.8	34.5	36.5	38.3	40.6	a	26 5.91	53 32 10.0 0.7	III 47.340	17 27 6.40	14 43 7.20	14 4677
10	9.5	2.6	4.6	7.0	8.9	11.1	c	26 6.85	53 32 “ “	V A 47.370	17 27 7.34	−14 46 22.39	−14 4678
11	8.9	3.8	5.7	7.6	9.7	11.9	a	28 37.05	53 6 10.0 1.0	I 48.450	17 29 37.49	−14 17 24.15	−14 4691
12	9.0	43.9	46.1	48.0	49.8	51.8	e	29 18.24	55 12 10.0 2.5	VII 44.360	17 30 18.98	16 22 18.21	16 4559
13	9.2	34.7	36.5	38.3	40.5	42.5	a	33 7.83	53 16 10.0 0.1	III 43.880	17 34 8.31	14 25 56.79	14 4717
14	9.4	43.9	46.0	48.1	50.4	52.5	c	33 48.19	54 18 10.0 1.9	III 45.450	17 34 48.82	15 28 30.46	15 4640
15	9.1	47.3	49.4	51.6	53.7	55.9	c	34 51.59	53 44 10.0 0.6	III 46.600	17 35 52.15	14 54 49.40	14 4727
16	8.7	32.1	34.2	36.6	38.6	40.8	c	35 36.47	53 44 “ “	III A 44.120	17 36 37.04	14 57 14.94	14 4734
17	9.0	58.1	59.8	1.8	3.6	5.9	a	36 31.24	53 44 “ “	I A (44).780	17 37 31.82	14 57 25.39	14 4737
18	9.0	12.5	14.2	16.1	18.0	20.3	a	36 45.61	53 44 “ “	III 45.430	17 37 46.18	14 54 26.22	14 4739
19	8.9	37.9	39.9	41.8	43.7	45.9	a	38 11.22	53 36 10.0 0.5	I 44.710	17 39 11.78	14 46 9.53	14 4747
20	9.0	16.7	18.7	20.8	22.9	25.1	c	38 20.85	53 36 “ “	III A 48.920	17 39 21.42	−14 50 44.52	−14 4748
21	8.7	17.5	19.3	21.2	23.3	25.4	a	39 50.71	53 36 “ “	I B 45.120	17 40 51.27	−14 43 4.25	−14 4762
22	9.6	47.9	50.3	52.4	54.6	56.7	c	39 52.39	53 36 “ “	III B 48.920	17 40 52.95	14 44 18.34	14 4763
23	6.0	20.7	22.5	24.5	26.3	28.8	a	40 53.92	53 36 “ “	III B 39.510	17 41 54.48	14 41 18.69	14 4770
24	9.1	40.8	42.5	......	46.5	48.7	a	42 14.19	55 0 10.0 1.4	III (A) 43.050	17 43 14.98	16 12 55.82	16 4622
25	9.5	23.2	24.8	26.7	28.6	31.0	a	42 56.43	55 0 “ “	III B 47.260	17 43 57.22	16 7 50.05	16 4624
26	8.7	22.3	24.1	26.1	28.0	30.2	a	43 55.71	55 0 “ “	I B 46.170	17 44 56.50	16 7 27.16	16 4629
27	9.0	26.1	28.3	30.5	32.6	34.6	c	44 30.43	52 46 10.0 29.5	V 44.250	17 45 30.90	13 55 58.09	13 4765
28	9.3	19.4	21.5	23.6	25.3	27.2	e	44 54.06	52 46 “ “	V 45.560	17 45 54.54	13 56 22.83	13 4768
29	9.1	7.8	9.9	11.8	13.6	15.8	a	46 41.28	54 28 10.0 1.1	III 44.370	17 47 42.00	15 38 3.74	15 4706
30	9.3	21.5	23.4	25.2	27.1	29.5	a	47 54.85	54 28 “ “	I A 48.700	17 48 55.60	−15 42 38.00	−15 4713
31	9.5	50.6	52.3	54.2	......	58.5	a	48 23.88	54 28 “ “	I A (49).270	17 49 24.62	−15 42 47.62	−15 4717
32	8.1	29.0	30.8	32.7	34.6	37.0	a	50 2.32	54 28 “ “	III ( ) 51.040	17 51 3.06	15 40 9.08	15 4729
33	9.1	15.0	17.1	19.3	21.5	23.8	c	50 19.35	54 28 “ “	III 51.320	17 51 20.10	15 40 14.27	15 4732
34	9.2	11.6	13.6	15.5	17.7	20.0	c	55 15.69	53 18 10.0 29.8	III B 40.010	17 56 16.28	14 23 19.90	14 4856
35	9.1	30.0	32.0	34.1	38.1	39.8	c_3 d_2	55 29.84	53 18 “ “	V A 39.580	17 56 30.45	14 29 38.57	14 4860
36	9.8	43.0	45.1	47.0	48.9	51.0	a	57 16.35	53 22 9.5 28.5	III A 39.630	17 58 16.97	14 33 36.42	14 4869
37	9.1	28.0	30.2	32.1	34.0	36.1	e	58 2.60	53 50 10.0 0.6	VII 47.360	17 59 3.29	15 0 55.91	15 4806
38	8.6	17.0	19.2	21.5	25.6	27.2	c_3 d_2	59 17.14	52 58 10.0 0.1	V A 48.280	18 0 17.73	14 12 21.44	14 4880
39	9.6	2.2	4.5	6.4	8.1	10.3	e	59 36.93	52 58 “ “	VII ( ) 43.430	18 0 37.51	14 7 37.42	14 4882
40	8.8	10.0	12.2	14.0	16.0	18.0	e	0 44.68	52 58 “ “	V (B) 44.410	18 1 45.26	−14 4 41.66	−14 4892
41	9.1	31.9	33.6	35.6	37.6	39.8	a	3 5.00	53 2 10.0 0.0	I 47.000	18 4 5.61	−14 12 38.91	−14 4908
42	9.2	59.2	1.1	3.0	4.9	7.0	a	3 32.33	53 2 “ “	I 42.080	18 4 32.93	[14 11 5.05]	14 4910
43	8.6	20.1	22.2	24.5	26.7	28.8	c	4 24.47	54 48 10.0 0.4	III B (44).830	18 5 25.33	15 54 52.20	15 4849
44	8.6	18.3	20.1	22.0	24.1	26.3	a	5 51.71	54 48 “ “	V A 46.610	18 6 52.59	16 1 52.33	16 4753
45	9.4	33.5	35.5	37.2	39.4	41.4	a	8 6.79	53 44 10.0 29.8	I 43.720	18 9 7.52	14 53 36.06	14 4946
46	8.5	45.1	47.0	48.9	51.0	53.1	a	9 18.42	53 44 “ “	I A 45.510	18 10 19.16	14 57 22.79	14 4955
47	8.5	9.4	11.2	13.0	15.0	17.1	a	10 42.53	53 44 “ “	I 42.070	18 11 43.27	14 53 3.40	14 4969
48	9.3	29.4	31.1	33.2	35.0	37.3	a	11 2.60	53 44 “ “	I A 45.330	18 12 3.35	14 57 18.53	14 4973
49	8.6	23.3	25.0	27.0	28.9	31.2	a	11 56.35	52 50 10.0 29.8	III 48.090	18 12 56.97	14 0 56.42	14 4988
50	8.5	13.2	15.3	17.5	19.7	21.6	c	12 17.47	52 50 “ “	III 50.850	18 13 18.09	−14 1 48.77	−14 4991
51	9.5	31.1	33.4	35.3	37.6	39.6	c	13 35.41	53 56 10.0 29.6	III 46.430	18 14 36.19	−15 6 27.32	−15 4930
52	8.6	15.7	17.8	20.0	22.2	24.2	c	14 19.99	53 56 “ “	III B 40.180	18 15 20.76	15 1 15.64	15 4939
53	8.6	55.9	57.7	59.8	1.7	3.8	a	15 29.21	53 56 “ “	I A 42.200	18 16 30.00	15 8 17.29	15 4946
54	8.6	25.6	27.4	29.7	31.9	34.0	c	15 29.73	53 56 “ “	III A 41.600	18 16 30.52	15 8 7.56	15 4916
55	9.3	15.9	17.8	19.6	21.5	23.7	a	17 49.09	53 38 10.0 28.3	I 46.350	18 18 49.85	14 48 20.31	14 5032
56	9.4	45.0	47.1	49.1	51.4	53.5	c	17 49.23	53 38 “ “	III 50.300	18 18 49.99	[14 49 37.32]	14 5033
57	9.0	19.0	21.0	23.3	25.4	27.6	c	18 23.27	53 38 “ “	V B 36.930	18 19 24.02	14 42 11.76	14 5037
58	8.9	19.5	21.8	23.9	26.0	28.0	c	19 23.85	53 38 “ “	III (A) 44.440	18 20 24.62	14 50 58.13	14 5044
59	9.1	31.9	34.0	36.2	38.4	40.5	c	24 36.21	52 58 10.0 29.6	V A 44.580	18 25 36.92	14 10 58.33	14 5090
60	9.0	12.5	14.4	16.6	18.7	20.9	c	25 16.63	52 58 “ “	III B 44.980	18 26 17.32	−14 4 38.66	14 5095
61	9.0	8.5	10.2	12.2	14.2	16.3	a	26 41.57	52 58 “ “	I A 44.590	18 27 42.28	−14 10 54.32	14 5105
62	......	17.5	19.4	21.1	23.0	25.4	a	27 50.64	53 34 10.0 29.1	I B 38.910	18 28 51.42	14 38 41.72	14 5113
63	9.4	6.8	9.0	11.1	13.2	15.6	c	28 11.15	53 34 “ “	III A 43.760	18 29 11.95	14 46 41.10	14 5117
64	9.0	37.5	39.7	41.6	43.5	45.4	e	28 12.09	53 34 “ “	VII A 44.110	18 29 12.89	14 46 50.59	14 5118
65	8.9	3.1	5.5	7.5	9.2	11.3	e	28 37.87	53 34 “ “	VII A 40.850	18 29 38.67	14 45 48.32	14 5124
66	7.9	50.1	52.1	54.1	56.0	58.1	a	31 23.36	52 56 10.0 29.8	III 43.630	18 32 24.08	14 5 22.33	14 5139
67	8.0	45.5	47.3	49.4	51.3	53.5	a	32 18.82	54 2 10.0 29.0	III B 41.800	18 33 19.68	15 7 37.74	15 5043
68	9.5	47.0	49.1	51.2	53.4	55.7	c	32 51.29	54 2 “ “	III 41.570	18 33 52.17	15 10 45.47	15 5048
69	9.2	23.0	25.3	27.0	29.0	31.1	e	32 57.56	54 2 “ “	V A 43.860	18 33 58.45	15 14 43.63	15 5049
70	9.7	17.3	19.5	21.6	23.3	25.3	e	38 51.95	53 40 10.0 28.5	VII B 42.720	18 39 52.79	−14 45 53.68	−14 5179

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
71	9.6	3.1	5.2	7.5	9.6	11.9	c	40 7.47	53 40 10.0 28.5	V 46.970	18 41 8.32	−14 50 25.00	−14 5188
72	7.8	56.1	58.1	59.9	2.0	4.2	a	41 29.45	53 40 “ “	I 42.770	18 42 30.31	14 49 0.97	14 5195
73	8.6	6.9	8.7	10.4	12.5	14.6	a	42 39.96	53 20 10.0 28.7	I 47.265	18 43 40.78	14 30 25.03	14 5198
74	9.2	11.8	13.6	15.5	17.5	19.7	a	43 44.96	53 20 “ “	I 45.890	18 44 45.79	14 29 58.35	14 5204
75	9.3	7.8	9.8	11.7	13.6	16.0	a	44 41.17	53 38 10.0 28.3	I 46.100	18 45 42.04	14 48 2.64	14 5210
76	9.5	38.7	40.6	42.5	44.5	46.7	a	46 11.86	52 46 9.2 27.0	I 44.460	18 47 12.62	13 55 26.96	13 5133
77	9.4	46.0	47.8	49.9	51.8	53.9	a	47 19.14	52 46 “ “	I (42).110	18 48 19.90	13 54 41.69	13 5138
78	9.3	28.6	30.4	32.5	34.3	36.4	a	48 1.78	53 22 10.0 27.4	I B 43.240	18 49 2.61	14 27 53.07	14 5222
79	9.4	24.7	26.7	29.0	30.9	33.0	c	48 28.87	53 22 “ “	V A 49.460	18 49 29.72	14 36 19.95	14 5224
80	8.4	33.5	35.3	37.1	39.0	41.2	a	50 6.51	53 0 10.0 28.7	III 44.290	18 51 7.32	−14 9 25.66	−14 5231
81	9.6	43.6	45.8	47.8	50.0	52.0	c	50 47.85	54 40 10.2 29.3	V 43.160	18 51 48.89	−15 49 11.15	−15 5157
82	9.3	43.7	45.9	48.0	52.2	53.7	c_3 d_2	51 43.71	54 22 10.0 28.8	V B 42.710	18 52 44.70	15 27 49.41	15 5159
83	9.2	26.0	28.2	30.3	32.4	34.5	c	52 30.29	54 22 “ “	V A 45.180	18 53 31.30	[15 35 0.49]	15 5164
84	9.0	55.5	57.7	59.9	2.0	4.1	c	52 59.85	54 22 “ “	V B 40.120	18 54 0.84	15 26 58.52	15 5166
85	9.1	41.1	42.9	44.8	46.8	49.0	a	54 14.40	54 22 “ “	I 41.420	18 55 15.40	15 30 31.63	15 5178
86	7.5	45.5	47.6	49.9	51.8	54.0	c	54 49.77	54 14 10.0 28.4	V A 40.300	18 55 50.76	15 25 25.87	15 5185
87	9.4	43.1	45.0	46.9	48.9	51.0	a	56 16.43	54 14 “ “	III B 38.680	18 57 17.41	15 18 27.37	15 5198
88	8.8	41.7	44.0	46.0	48.1	50.4	c	56 46.05	54 14 “ “	III A 41.270	18 57 47.04	−15 25 41.90	−15 5204

Reduction Elements. Zone 42.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 27.7....	+0.289	−0.316	−0.071	+0.280	−0.382	−0.066
27.8...	+0.272	−0.448	−0.062			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	η Ophiuchi		*ξ* Ophiuchi		*ν* Ophiuchi		2 H. Scuti		*λ* Aquilae		*π* Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 25 54.50		59 50 5.20		48 36 5.20		53 28 4.55		43 52 4.55		60 0 4.45	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......		5 13.94	43.460	5 3.60	44.280	5 19.29	44.670	5 26.85	47.445	6 19.62	48.095	6 32.04
II Red. to Mer......	44.030	1.67	.430	1.59	.260	1.70	.625	1.66	.400	1.75	.070	1.59
VI Inclination......	43.835	0.82	.240		.095		.510		.280		47.910	
VII Refraction......	.800	1 20.3	.245	1 38.7	.040	1 5.2	.460	1 17.4	.240	55.2	.900	1 39.3

	d Sagittarii		*υ* Sagittarii		*κ* Aquilae	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	57 58 5.70		54 58 4.80		46 6 4.90	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.210	5 36.83	48.205	6 33.48	44.910	5 31.66
II Red. to Mer......	.170	1.62	.160	1.65	.855	1.73
VI Inclination......	.010		47.985		.780	
VII Refraction......	44.975	1 31.7	.925	1 21.9	.690	59.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Ursae Minoris.....	16 56 15.49	7	+0.35	[+41.84]	316 44	....
η Ophiuchi.........	17 3 38.01	11	0.00	+41.77	54 32 31.2	42.2
ξ Ophiuchi.........	17 13 59.13	11	+0.03	+41.81	59 56 49.1	42.0
ν Ophiuchi.........	17 52 31.32	11	−0.02	+41.82	48 42 31.4	41.4
2 H. Scuti....	18 22 29.10	11	0.00	+41.88	53 34 50.5	41.1
λ Aquilae...........	18 59 56.95	11	−0.04	+41.85	43 59 21.1	40.4
π Sagittarii.........	19 2 47.19	11	+0.04	+41.88	60 8 17.4	39.8
d Sagittarii.........	19 10 45.45	11	+0.02	+41.97	58 5 15.9	40.2
υ Sagittarii.........	19 14 58.85	11	+0.01	+41.95	55 6 1.8	40.7
τ Draconis..........	19 16 54.19	11	0.00	[+41.93]	325 46	....
κ Aquilae...........	19 30 30.58	11	−0.03	+42.01	46 12 38.0	41.2

h		s
17.635..........	*dt*....................	+41.820
	Hourly rate...........	+ 0.0717

	° ′ ″
Adopted Equator Point.........	38 56 41.00

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 4	29.815	56.1	54.2
17 54	29.805	55.4	54.2
18 37	29.805	55.6	55.2
19 33	29.815	55.2	54.2

Notes.

53. Blue.
54. Yellow.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	A = α to 1900.0					D = Z. D.S. to 1894.0				
			52°	53°	54°	55°	56°	52°	53°	54°	55°	56°
°	s	h m	s	s	s	s	s	″	″	″	″	″
52	−0.006	17 0	+18.326	+18.463	+18.599	+18.735	+18.874	−13.92	−13.70	−13.50	−13.28	−13.06
53	−0.002	17 30	18.460	18.598	18.738	18.878	+19.018	13.05	12.80	12.56	12.30	−12.05
54	+0.002	18 0	18.581	18.720	18.859	18.999	......	12.07	11.79	11.51	11.23	.....
55	0.007	18 30	18.686	18.823	18.959	19.097	......	10.99	10.68	10.37	10.08	.....
56	+0.013	19 0	+18.773	+18.904	+19.038	+19.170	......	− 9.82	− 9.50	− 9.17	− 8.85	.....

APPARENT RIGHT ASCENSION.	R			
	52° 30′	53° 30′	54° 30′	55° 30′
h m	″	″	″	″
17 0	74.63	77.37	80.24	83.27
17 30	74.61	77.36	80.22	83.25
18 0	74.58	77.32	80.19	83.21
18 30	74.47	77.21	80.08	83.10
19 0	74.52	77.27	80.13	83.16

1894 APRIL 30. ZONE 43. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	
1	8.3	24.1	26.2	28.2	30.4	32.7	c	51 28.33	53 2 10.0 29.9	III 46.250	16 52 29.45	−14 13 1.69	−14 4507
2	9.5	36.2	38.4	40.3	42.2	44.0	e	57 10.85	52 56 10.0 29.5	VII 50.770	16 58 11.99	14 8 27.60	14 4528
3	9.6	1.5	3.6	5.6	7.8	10.0	c	59 5.71	53 4 10.0 0.2	V B 52.030	17 0 6.88	14 13 37.55	14 4540
4	9.3	46.7	49.0	50.8	52.7	54.7	e	59 21.41	53 4 " "	VII B 47.540	17 0 22.57	14 12 13.37	14 4542
5	9.0	33.2	35.0	37.0	38.9	41.1	a	6 6.48	54 2 10.0 28.0	(I) A 42.980	17 7 7.83	15 15 5.99	15 4485
6	9.3	41.2	43.1	45.4	47.7	50.0	c	6 45.49	54 2 " "	III B 42.970	17 7 46.83	15 8 41.72	15 4487
7	9.2	2.3	4.5	6.7	8.7	10.9	c	8 6.63	53 4 10.0 26.9	V B 39.760	17 9 7.84	14 9 38.00	14 4582
8	8.4	56.9	59.0	0.7	2.7	4.6	e	8 31.39	53 4 " "	VII A 49.450	17 9 32.62	14 19 8.99	14 4584
9	8.4	6.5	8.2	10.0	12.0	14.0	a	11 39.56	54 0 10.0 26.9	I B (39).270	17 12 40.91	15 5 26.54	15 4512
10	8.1	40.1	42.1	44.0	45.8	48.1	a	12 13.44	54 0 " "	I B (43).180	17 13 14.79	−15 6 40.69	−15 4514
11	9.1	19.3	21.1	23.0	25.0	27.1	a	17 52.65	54 50 10.0 26.9	I 43.660	17 18 54.17	−16 0 2.05	−15 4541
12	9.0	56.6	58.7	0.7	3.0	5.1	c	18 0.83	54 50 " "	III A 45.440	17 19 2.36	16 3 50 82	16 4503
13	9.0	24.0	26.0	27.9	29.8	32.0	a	19 57.43	54 32 10.0 27.1	I B 37.970	17 20 58.90	15 36 59.54	15 4551
14	7.3	50.1	52.0	54.0	56.0	58.2	a	20 23.58	54 32 " "	III A 46.010	17 21 25.07	15 45 59.62	15 4554
15	9.0	54.7	56.6	58.4	0.4	2.5	a	21 28.01	54 32 " "	I B 39.200	17 22 29.49	15 37 22.25	15 4557
16	9.4	9.2	11.4	13.5	17.8	19.0	c_3 d_2	22 9.18	54 44 10.0 27.2	V A 40.320	17 23 10.70	15 56 12.69	15 4562
17	8.6	7.4	9.5	11.7	13.8	16.0	c	23 11.69	54 44 " "	III B 40.950	17 24 13.21	15 49 57.20	15 4568
18	8.9	25.0	26.7	28.7	30.7	32.8	a	26 58.18	53 50 10.0 27.5	I 45.180	17 27 59.61	15 0 23.65	14 4683
19	9.0	54.0	56.1	58.2	0.6	2.8	c	26 58.35	53 50 " "	III A 44.700	17 27 59.78	15 3 29.45	15 4592
20	8.9	45.2	47.1	49.0	51.1	53.4	a	28 18.73	54 58 10.0 27.5	III 43.100	17 29 20.32	[−16 7 48.88]	−16 4557
21	9.0	8.2	10.0	12.0	14.0	16.1	a	29 41.63	54 58 " "	I 42.775	17 30 43.22	−16 7 40.17	−16 4563
22	8.4	37.8	39.9	42.0	44.2	46.3	c	35 42.05	54 46 10.0 26.9	III 45.810	17 36 43.64	15 56 35.92	15 4652
23	8.4	6.0	7.8	10.0	12.2	14.4	c	36 10.09	54 46 " "	V B 49.560	17 37 11.68	15 54 36.30	15 4658
24	8.5	18.5	20.6	22.8	25.0	27.1	c	37 22.81	53 12 10.0 27.7	V 45.750	17 38 24.20	14 22 31.00	14 4743
25	8.2	6.7	8.5	10.4	12.5	14.6	a	38 39.87	53 12 " "	I A 41.290	17 39 41.27	14 24 15.29	14 4754
26	9.0	1.2	3.0	5.0	6.9	9.1	a	40 34.35	53 6 10.0 26.4	I 43.650	17 41 35.75	14 15 45.10	14 4768
27	9.0	5.7	7.5	9.6	11.6	13.7	a	41 39.04	53 56 10.0 28.0	I 47.780	17 42 40.55	15 7 6.58	15 4685
28	8.3	53.1	54.9	56.9	58.9	1.2	a	43 26.30	53 6 10.0 27.6	I B 42.110	17 44 27.69	14 12 2.73	14 4780
29	9.1	31.1	33.3	35.3	37.6	39.7	c	43 35.41	53 6 " "	III A 40.240	17 44 36.81	14 17 54.22	14 4784
30	9.0	52.9	54.9	57.1	59.3	1.4	c	43 57.13	53 6 " "	V A 40.520	17 44 58.53	−14 18 0.89	−14 4788
31	9.0	14.0	16.1	18.0	19.8	21.9	e	44 48.58	53 6 " "	V 41.700	17 45 49.98	−14 15 9.94	−14 4792
32	8.0	44.9	47.2	49.0	50.9	52.9	e	45 19.50	53 50 10.0 27.3	VII 44.140	17 46 21.01	14 59 59.72	14 4797
33	8.2	48.7	50.5	52.4	54.4	56.6	a	47 21.91	53 42 10.0 27.2	I 48.155	17 48 23.41	14 53 9.81	14 4808
34	9.3	59.8	1.6	3.6	5.6	7.6	a	48 33.17	54 40 10.0 27.5	I 44.220	17 49 34.82	15 49 57.56	15 4718
35	7.5	58.8	0.7	2.5	4.5	6.7	a	49 32.16	54 40 " "	I B 47.160	17 50 33.81	15 47 40.78	15 4722
36	9.2	28.5	30.5	32.8	35.0	37.0	c	49 32.77	54 40 " "	III B 48.060	17 50 34.42	15 47 59.65	15 4723
37	8.6	24.8	26.8	29.1	31.3	33.3	c	50 29.07	53 20 10.0 27.2	III 46.710	17 51 30.54	−14 30 41.42	−14 4828

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
38	9.4	25.5	27.4	29.6	31.8	33.9	c	51 29.65	54 54 10.0 27.4	V 43.775	17 52 31.34	−16 3 51.84	−16 4669
39	9.0	49.0	51.0	53.1	55.4	......	c	52 53.20	53 0 10.0 27.5	III 46.010	17 53 54.63	14 10 26.05	14 4839
40	8.0	......	......	......	......	......	......	......	53 0 “ “	III A 41.150	17 54 39	−14 12 6.29	−14 4845
41	8.8	19.7	21.6	23.6	25.4	27.7	a	54 53.21	55 16 10.0 28.6	I 45.560	17 55 54.96	−16 26 22.54	−16 4687
42	8.8	18.3	20.4	22.7	24.9	26.9	c	55 22.65	55 2 10.0 28.1	III 48.760	17 56 24.38	16 13 24.04	16 4690
43	9.7	20.6	22.9	25.2	27.3	29.3	c	56 25.07	54 18 10.0 27.5	V 42.880	17 57 26.69	15 27 30.47	15 4789
44	9.3	38.6	40.5	42.9	44.9	47.1	c	57 42.81	54 32 10.0 27.0	III B 44.900	17 58 44.46	15 38 54.81	15 4800
45	8.9	0.3	2.4	4.5	8.7	10.4	c_3 d_2	58 0.27	54 32 “ “	V 46.610	17 59 1.93	15 42 41.22	15 4805
46	9.2	19.1	21.1	23.3	25.4	27.6	c	59 23.31	52 58 10.0 26.9	V 46.040	18 0 24.77	14 8 24.68	14 4881
47	9.0	14.7	16.6	18.8	21.0	23.1	c	0 18.85	53 12 10.0 27.5	V A 40.480	18 1 20.35	14 23 52.39	14 4887
48	8.7	3.5	5.5	7.8	9.9	12.0	c	1 7.75	53 12 “ “	V B 42.745	18 2 9.24	14 18 9.72	14 4894
49	8.6	36.1	38.4	40.5	42.3	44.3	e	1 10.93	53 12 “ “	VII B 40.760	18 2 12.42	14 17 33.29	14 4895
50	8.2	40.5	42.3	44.2	46.3	48.4	a	4 13.72	53 34 10.0 27.6	I 48.060	18 5 15.29	−14 44 59.54	−14 4914
51	9.0	23.6	25.3	27.4	29.2	31.4	a	4 56.87	54 30 10.0 28.1	I B 43.020	18 5 58.55	−15 36 14.20	−15 4854
52	8.0	0.2	2.3	4.4	6.5	8.6	c	5 4.41	54 30 “ “	III A 41.130	18 6 6.11	15 42 5.40	15 4856
53	9.1	28.0	30.0	32.1	34.2	36.5	c	5 32.17	54 30 “ “	V (B) 40.300	18 6 33.85	15 35 25.46	15 4861
54	8.8	13.8	16.3	18.1	19.9	21.9	e	5 48.42	54 30 “ “	V 41.100	18 6 50.11	15 38 52.98	15 4865
55	8.0	14.5	16.7	18.6	20.6	22.6	e	6 49.03	54 30 “ “	V (B) 46.580	18 7 50.72	15 37 24.38	15 4874
56	9.0	18.1	20.3	22.4	24.5	26.7	c	8 22.41	54 30 “ “	III 50.150	18 9 24.12	15 41 42.39	15 4890
57	9.1	13.2	15.0	16.9	18.8	20.9	a	9 46.27	53 2 10.0 27.0	I A 49.880	18 10 47.80	14 16 42.79	14 4962
58	9.3	35.5	37.3	39.2	41.1	43.3	a	11 8.56	53 2 “ “	I B 39.270	18 12 10.07	14 6 54.63	14 4975
59	9.0	8.8	10.6	12.6	14.4	16.6	a	11 41.90	53 2 “ “	I A 37.190	18 12 43.42	14 12 40.27	14 4984
60	9.0	40.2	42.3	44.4	46.5	48.5	c	11 44.39	53 2 “ “	III B 38.260	18 12 45.90	−14 6 36.85	−14 4985
61	9.3	43.7	46.0	48.1	50.2	52.5	c	12 48.11	54 58 10.0 26.8	III B 39.280	18 13 49.89	−16 3 1.85	−16 4811
62	9.3	17.4	19.8	21.7	23.5	25.5	e	12 51.95	54 58 “ “	V B 41.480	18 13 53.73	16 3 45.27	16 4812
63	9.3	10.6	12.5	14.8	17.0	19.1	c	14 14.81	54 58 “ “	VI (B) 41.200	18 15 16.60	16 3 39.99	16 4826
64	9.2	49.8	51.6	53.4	55.4	57.5	■	14 23.10	54 58 “ “	....	18 15 24.89	16 3 1	16 4828
65	9.1	59.9	2.0	4.0	5.9	7.9	e	15 34.30	54 58 “ “	VII (42).010	18 16 36.10	16 7 7.92	16 4840
66	9.1	54.0	56.0	58.3	0.5	2.7	c	17 58.31	52 50 10.0 27.8	III B 48.960	18 18 59.82	13 57 57.32	13 4968
67	7.0	28.8	30.8	33.0	35.2	37.4	c	18 33.05	52 50 “ “	III 51.465	18 19 34.57	14 1 57.05	14 5039
68	8.4	56.9	58.7	0.5	2.5	4.7	a	20 30.04	53 32 10.0 27.4	I A 45.900	18 21 31.67	14 45 23.58	14 5053
69	9.4	43.7	45.4	47.3	49.2	51.5	a	21 16.80	53 32 “ “	I A 48.150	18 22 18.44	14 46 6.05	14 5062
70	8.8	15.0	17.1	19.3	21.4	23.6	c	21 19.29	53 32 “ “	III 49.380	18 22 20.92	−14 43 18.00	−14 5063
71	6.0	54.9	57.0	58.8	0.7	3.0	a	22 28.24	53 32 “ “	III B 42.050	18 23 29.86	−14 37 45.58	−14 5071
72	9.2	29.5	31.6	33.7	38.0	39.4	c_3 d_2	22 29.47	53 32 “ “	V 46.580	18 23 31.11	14 42 25.77	14 5072
73	6.8	58.6	0.6	3.0	5.0	7.1	c	23 2.87	53 32 “ “	V B 45.470	18 24 4.50	14 38 51.96	14 5077
74	9.3	27.7	29.9	31.8	33.7	35.6	e	24 2.12	54 54 10.0 27.1	VII B 42.060	18 25 3.94	15 59 52.24	16 4906
75	8.4	9.5	11.8	13.6	15.6	17.5	e	24 43.97	54 54 “ “	V 41.140	18 25 45.80	16 2 45.44	16 4910
76	8.7	35.9	38.0	40.3	42.4	44.5	c	25 40.23	54 54 “ “	V B 43.285	18 26 42.05	16 0 13.41	16 4919
77	8.0	30.9	32.9	35.2	37.4	39.6	c	26 35.21	54 54 “ “	III A 44.760	18 27 37.05	16 7 4.98	16 4928
78	8.2	59.6	1.4	3.3	5.3	7.3	a	28 32.96	55 6 10.0 28.6	I B 46.020	18 29 34.82	16 13 2.21	16 4941
79	8.0	58.4	0.8	2.7	4.5	6.5	e	28 32.92	55 6 “ “	VII(B) 45.760	18 29 34.78	16 13 1.95	16 4941
80	8.9	24.7	26.4	28.5	30.4	32.7	a	30 58.02	54 20 10.0 26.8	I 47.710	18 31 59.79	−15 30 42.04	−15 5033
81	7.9	38.6	40.5	42.5	44.3	46.5	a	32 11.73	52 42 10.0 26.9	I 45.320	18 33 13.29	−13 51 50.86	−13 5060
82	9.4	26.5	28.4	30.4	32.3	34.5	a	32 59.86	54 6 10.0 27.3	I 46.340	18 34 1.61	15 16 14.49	15 5050
83	9.0	31.1	33.0	35.1	37.4	39.6	c	33 35.25	53 46 10.0 26.2	V B 39.510	18 34 36.95	14 50 53.60	14 5149
84	8.8	10.9	12.9	15.0	17.1	19.1	c	34 15.01	53 46 “ “	V A 44.410	18 35 16.73	14 58 52.00	15 5059
85	8.9	50.0	52.4	54.3	56.1	58.3	e	34 24.76	53 46 “ “	VII B 39.720	18 35 26.46	14 50 58.60	14 5153
86	9.0	29.4	31.1	33.2	35.1	37.3	a	38 2.79	55 2 10.0 27.5	I 42.280	18 39 4.68	16 10 57.98	16 5007
87	9.3	24.7	26.5	28.5	30.3	32.5	a	38 57.82	53 8 10.0 27.3	I 47.050	18 39 59.46	14 18 22.10	14 5181
88	8.0	30.5	32.3	34.2	36.1	38.2	a	40 3.61	53 26 10.0 27.3	I B 49.090	18 41 5.28	14 33 49.09	14 5187
89	9.2	25.8	27.7	29.5	31.5	33.6	a	40 58.98	53 26 “ “	I 51.810	18 42 0.67	14 37 52.68	14 5192
90	9.0	59.2	1.1	3.3	5.4	7.4	c	41 3.29	52 54 10.0 27.1	V 48.350	18 42 4.90	−14 4 48.44	−14 5193
91	7.8	44.8	46.4	48.5	50.1	52.6	a	42 17.75	52 54 “ “	III B 46.400	18 43 19.37	−14 0 56.77	−14 5197
92	9.5	34.3	36.1	37.9	39.8	41.9	a	44 7.26	52 48 10.0 27.8	I B 40.360	18 45 8.86	13 52 59.26	13 5122
93	8.0	7.7	9.4	11.4	13.5	15.7	a	44 40.81	52 48 “ “	III A 47.020	18 45 42.43	14 1 32.94	14 5211
94	9.2	12.0	14.0	16.3	18.3	20.4	c	45 16.21	55 20 10.0 27.6	III B 42.350	18 46 18.16	16 25 46.48	16 5053
95	7.7	39.1	41.0	42.9	44.9	47.1	a	46 12.62	55 20 “ “	III 45.950	18 47 14.58	16 30 6.92	16 5060
96	9.2	26.8	28.9	31.0	33.2	35.4	c	46 31.07	55 20 “ “	III 45.220	18 47 33.03	16 29 52.88	16 5064
97	9.4	53.8	55.6	57.4	59.6	1.8	a	47 27.27	55 20 “ “	I (A) 43.140	18 48 29.24	16 32 24.23	16 5069
98	9.3	55.4	57.5	59.7	1.9	4.0	c	47 59.71	55 20 “ “	V A 39.320	18 49 1.68	16 31 14.49	16 5072
99	9.5	38.4	40.3	42.4	44.7	46.7	c	48 42.51	55 20 “ “	V A 46.840	18 49 44.50	16 33 37.33	16 5077
100	6.0	9.1	11.4	13.1	15.1	17.0	e	48 43.44	55 20 “ “	VII 45.100	18 49 45.41	−16 29 52.62	−16 5078
101	9.0	20.3	22.1	24.1	26.0	28.0	a	51 53.49	53 44 10.0 26.4	I 46.460	18 52 55.25	−14 54 6.22	−14 5242
102	9.4	35.8	37.6	39.4	41.4	43.7	a	53 8.97	53 44 “ “	I B 39.490	18 54 10.73	14 48 40.68	14 5248
103	9.2	12.0	13.8	15.8	17.7	19.9	a	54 45.20	53 30 10.0 27.0	I 44.830	18 55 46.94	14 39 33.41	14 5256
104	9.5	31.8	33.7	35.5	37.5	39.7	a	56 5.00	53 30 “ “	I 46.430	18 57 6.75	14 40 3.25	14 5267
105	8.8	15.0	17.3	19.5	21.7	23.7	c	56 19.45	53 52 10.0 26.6	V 44.380	18 57 21.25	15 1 28.53	15 5199
106	9.0	4.1	5.8	7.8	9.7	11.9	a	57 37.12	52 50 10.0 28.0	III B 42.640	18 58 38.77	13 55 38.15	13 5210
107	9.2	34.2	36.0	37.9	39.8	42.0	a	58 7.25	52 50 “ “	III 45.150	18 59 8.91	−13 59 38.13	−14 5280

Reduction Elements. Zone 43.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 30.7....	+0.235	−0.371	−0.196	+0.237	−0.341	−0.211
30.8....	+0.239	−0.311	−0.226			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	20 Ophiuchi		24 Ophiuchi		*η* Ophiuchi		*ξ* Serpentis		*λ* Aquilae		*π* Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	49 26 5.30		61 48 5.15		54 26 4.15		54 10 3.50		43 52 4.00		60 0 4.05	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.565	5 24.81	45.990	5 51.79		5 2.07	44.400	5 21.32	47.460	6 19.96	48.110	6 32.04
II Red. to Mer......	.530	1.70	.930	1.57		1.66	.340	1.66	.460	1.75	.070	1.59
VI Inclination	.370		.810		(43).255	2.04	.200		.280		47.930	
VII Refraction.......	.370	1 8.4	.780	1 49.0	.260	1 21.8	.165	1 20.9	.235	56.3	.865	1 41.3

	d Sagittarii		*υ* Sagittarii	
	° ′ ″		° ′ ″	
CIRCLE READING.	57 58 4.65		54 58 3.55	
	r	′ ″	r	′ ″
I Microm. Eq......	45.215	5 36.83	48.220	6 34.87
II Red. to Mer......	.165	1.62	.235	1.65
VI Inclination	.020		.070	
VII Refraction	44.965	1 33.5	.045	1 23.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
20 Ophiuchi.........	16 43 17.44	11	−0.15	+42.82	49 32 40.2	42.6
24 Ophiuchi.........	16 49 43.71	11	−0.12	+42.89	61 55 47.5	41.6
ε Ursae Minoris.....	16 56 14.14	8	+0.98	[+42.80]	316 44	....
η Ophiuchi.........	17 3 37.05	11	−0.14	+42.95	54 32 31.7	42.7
ξ Serpentis.........	17 30 50.16	11	−0.14	+42.87	54 16 47.4	41.7
λ Aquilae...........	18 59 56.05	11	−0.16	+42.96	43 59 22.0	41.6
π Sagittarii.........	19 2 46.34	11	−0.12	+42.98	60 8 19.0	41.6
d Sagittarii.........	19 10 44.65	11	−0.13	+43.02	58 5 16.6	41.1
υ Sagittarii.........	19 14 58.00	11	−0.14	+43.03	55 6 3.6	42.7
τ Draconis..........	19 16 53.05	11	+0.26	[+43.03]	325 46	....

h 17.030...........*dt* .... s +42.882

Hourly rate .... + 0.0555

Adopted Equator Point..........38° 56′ 41″.95

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
16 40	30.055	51.8	49.2
17 35	30.035	49.8	49.4
18 50	30.015	50.6	48.4
19 20	30.015	50.5	48.2

Notes.
35. White.
36. Blue.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0					*D* = Z. D. S. to 1894.0				
			52°	53°	54°	55°	56°	52°	53°	54°	55°	56°
°	s	h m	s	s	s	s	s	″	″	″	″	″
52	0.144	16 30	+18.130	+18.260	+18.391	......	......	−14.66	−14.50	−14.34	.....	.....
53	0.141	17 0	18.269	18.404	18.540	+18.677	......	13.91	13.71	13.51	−13.31	.....
54	0.139	17 30	18.396	18.533	18.672	18.812	......	13.00	12.76	12.53	12.29	.....
55	0.137	18 0	18.510	18.649	18.786	18.927	+19.067	11.99	11.72	11.46	11.19	−10.92
56	−0.134	18 30	18.609	18.745	18.882	19.019	19.159	10.86	10.58	10.29	9.99	9.70
		19 0	+18.692	+18.823	+18.956	+19.089	+19.224	− 9.67	− 9.35	− 9.03	− 8.71	− 8.39

APPARENT RIGHT ASCENSION.	*R*			
	52° 30′	53° 30′	54° 30′	55° 30′
h m	″	″	″	″
16 30	76.03	78.83	81.75	84.84
17 0	75.98	78.78	81.70	84.78
17 30	75.94	78.74	81.66	84.74
18 0	75.96	78.76	81.68	84.76
18 30	76.00	78.80	81.71	84.80
19 0	76.03	78.83	81.75	84.84

1894 MAY 3. ZONE 44. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ' " "	r.	h m s	° ' "	°
1	7.7	19.4	21.5	23.7	26.0	28.0	c	17 23.73	57 2 10.0 29.0	III 44.010	11 18 24.54	−18 13 48.50	−17 3367
2	9.0	54.1	56.0	57.9	59.8	2.0	a	29 27.24	52 56 10.0 28.2	I 44.620	11 30 28.18	14 7 47.38	13 3405
3	9.4	21.6	23.4	25.1	27.0	29.4	a	36 55.08	56 20 10.0 28.2	I 44.540	11 37 56.03	17 31 55.20	17 3450
4	8.9	57.1	58.9	0.8	2.9	5.1	a	37 30.74	56 20 " "	I 46.450	11 38 31.70	17 32 31.59	17 3453
5	9.3	25.0	26.7	28.6	30.6	32.9	a	42 58.35	55 6 10.0 28.0	I 47.420	11 43 59.34	16 18 46.55	16 3331
6	8.8	32.9	34.5	36.5	38.5	40.7	a	47 6.04	53 54 10.0 27.6	I 48.530	11 48 7.05	15 7 4.35	14 3427
7	8.9	0.5	2.4	4.3	6.2	8.6	a	47 33.80	53 54 " "	I B 45.050	11 48 34.82	15 2 45.88	14 3428
8	9.0	26.7	28.6	30.5	32.7	34.9	a	51 0.51	56 38 10.0 28.5	I 43.410	11 52 1.56	17 49 34.95	17 3514
9	8.4	11.1	13.2	15.1	17.1	19.2	a	51 45.07	57 12 10.0 29.2	I 49.160	11 52 46.12	18 25 26.48	18 3285
10	8.7	5.9	7.7	9.8	11.7	13.8	a	52 39.09	53 6 10.0 27.5	I 46.710	11 53 40.14	−14 18 27.60	−14 3439
11	9.0	25.1	26.8	28.8	30.7	32.9	a	53 58.63	56 14 10.0 28.6	I 46.780	11 54 59.70	−17 26 37.94	−17 3527
12	9.1	20.5	22.3	24.3	26.2	28.5	a	54 54.22	56 46 10.0 28.5	I 43.410	11 55 55.29	17 57 35.32	17 3529
13	9.0	14.1	16.2	18.5	20.8	22.8	c	55 18.49	55 46 10.0 27.5	III 43.510	11 56 19.56	16 57 35.59	16 3373
14	9.5	19.4	21.5	23.7	25.7	28.0	c	2 23.67	55 28 10.0 27.6	III 44.520	12 3 24.78	16 39 53.89	16 3395
15	9.0	0.2	2.4	4.6	6.6	9.0	c	3 4.57	56 16 10.0 28.0	V 45.660	12 4 5.69	17 28 19.73	17 3564
16	8.0	52.2	54.4	56.4	58.7	1.0	c	3 56.55	55 46 10.0 27.5	V 47.230	12 4 57.67	16 58 47.86	16 3403
17	8.7	30.9	32.7	35.0	39.0	40.8	c_3 d_2	4 30.67	55 12 10.0 28.0	V 44.520	12 5 31.79	16 23 54.91	16 3407
18	8.6	36.5	38.6	40.8	42.9	45.1	c	5 40.79	57 2 10.0 28.7	III 44.200	12 6 41.94	18 13 52.89	17 3569
19	9.2	20.2	22.0	24.0	26.0	28.3	a	6 53.65	54 50 10.0 26.5	III 49.460	12 7 54.78	16 3 25.45	15 3433
20	9.4	23.0	24.9	26.0	28.9	31.0	a	7 56.36	53 44 10.0 26.3	III 49.825	12 8 57.49	−14 57 29.33	−14 3479
21	9.5	41.1	43.1	45.1	47.1	49.2	a	9 15.00	56 52 10.0 28.2	I 45.390	12 10 16.18	−18 4 12.80	−17 3583
22	9.0	56.7	58.6	0.4	2.5	4.7	a	9 30.44	56 52 " "	III B 38.940	12 10 31.62	17 58 59.53	17 3584
23	9.2	0.4	2.8	4.6	6.6	8.5	e	9 34.59	57 6 10.0 27.6	VII A 38.310	12 10 35.78	18 19 16.19	18 3355
24	9.4	0.6	2.3	4.3	6.2	8.4	a	11 34.03	55 36 10.0 27.5	I 45.080	12 12 35.21	16 48 2.71	16 3432
25	9.4	0.8	3.0	5.3	7.5	9.8	c	12 5.29	56 58 10.0 28.5	III 42.460	12 13 6.49	18 9 19.22	17 3596
26	8.0	......	36.2	38.1	40.0	42.4	a	13 7.72	54 30 10.0 27.0	III 48.630	12 14 8.89	15 43 8.71	15 3450
27	9.2	20.0	21.9	23.9	26.0	28.1	a	14 53.57	55 8 10.0 28.0	I 43.400	12 15 54.77	16 19 29.52	16 3443
28	8.6	7.0	8.9	10.8	12.9	15.1	a	15 40.78	56 38 10.0 28.2	I 47.070	12 16 42.00	17 50 43.78	17 3602
29	9.7	57.4	59.1	1.3	3.1	5.2	a	16 31.01	56 22 10.0 28.1	I 46.750	12 17 32.23	17 34 36.78	17 3608
30	9.8	50.9	53.0	54.8	56.9	59.1	a	17 24.69	56 6 10.0 28.1	I 45.120	12 18 25.81	−17 18 4.92	−17 3612
31	8.9	47.1	49.2	51.1	53.0	55.1	a	18 20.91	56 28 10.0 28.2	I 48.960	12 19 22.14	−17 41 19.10	−17 3615
32	8.8	5.4	7.3	9.2	11.3	13.3	a	18 39.11	56 28 " "	III 50.850	12 19 40.35	17 41 56.88	17 3617
33	9.2	51.6	53.6	55.6	57.8	59.9	a	19 25.50	56 28 " "	I B 44.150	12 20 26.74	17 36 35.20	17 3619
34	8.0	27.9	29.7	31.7	33.7	35.8	a	21 1.60	56 38 10.0 28.0	I 49.570	12 22 2.85	17 51 30.93	17 3626
35	9.6	......	49.3	......	53.1	55.1	e	21 21.19	56 50 10.0 29.0	VII 48.810	12 22 22.45	18 3 22.45	17 3627
36	8.0	9.8	11.8	13.7	15.8	18.0	a	21 43.70	56 50 " "	I 49.060	12 22 44.96	18 3 22.29	17 3629
37	9.4	4.0	6.1	8.1	10.1	12.1	e	22 38.30	55 50 10.0 26.1	VII 45.040	12 23 39.45	17 2 6.19	16 3472
38	9.7	2.9	5.0	7.3	9.5	11.8	c	24 7.31	56 58 10.0 27.6	V 48.370	12 25 8.60	18 11 12.18	17 3638
39	8.8	53.8	56.0	58.2	0.4	2.5	c	24 58.19	55 58 10.0 28.0	V 44.020	12 25 59.47	17 9 46.90	16 3480
40	9.0	7.8	10.0	12.2	14.3	16.5	c	26 12.17	57 12 10.0 28.5	III 44.440	12 27 13.48	−18 23 56.79	−18 3414
41	9.0	47.9	50.1	52.2	54.0	56.1	e	26 22.16	56 40 10.0 28.6	VII B 41.650	12 27 23.46	−17 47 52.62	−17 3645
42	8.1	50.4	52.5	54.6	56.7	59.0	c	27 54.65	56 26 10.0 28.5	V 46.310	12 28 55.96	17 38 31.50	17 3651
43	9.4	35.7	37.9	40.1	42.3	44.5	c	28 40.11	56 26 " "	V B 50.550	12 29 41.42	17 36 39.73	17 3655
44	9.0	56.8	58.9	1.1	3.3	5.5	c	30 1.13	57 8 10.0 27.5	III 45.635	12 31 2.47	18 20 18.52	18 3427
45	9.3	25.4	27.3	29.2	31.3	33.5	a	31 59.23	56 58 10.0 28.0	I B 48.315	12 33 0.58	18 7 54.99	17 3665
46	9.5	11.1	13.4	15.3	17.0	19.4	a	32 45.12	56 58 " "	III B 34.530	12 33 46.46	18 3 34.28	17 3670
47	9.0	37.4	39.4	41.5	43.2	45.3	e	35 11.89	53 42 10.0 27.4	V 46.260	12 36 13.17	14 54 21.70	14 3555
48	9.0	57.3	59.3	1.6	3.7	5.9	c	37 1.57	56 30 10.0 29.0	V 47.890	12 38 2.94	17 43 1.25	17 3691
49	8.4	32.2	34.3	36.3	38.7	40.9	c	37 36.49	56 30 " "	V 51.690	12 38 37.87	17 44 13.52	17 3694
50	8.0	22.3	24.3	26.6	28.7	30.9	c	38 26.57	56 2 10.0 27.6	V 44.130	12 39 27.94	−17 13 47.42	−16 3527
51	8.1	33.0	34.9	36.9	38.8	41.0	a	40 6.73	56 28 10.0 29.5	I 45.950	12 41 8.12	−17 40 20.69	−17 3704
52	9.3	42.3	44.3	46.3	48.3	50.5	a	41 16.27	57 12 10.0 27.6	I 45.950	12 42 17.70	18 24 21.88	18 3466
53	9.5	42.7	44.8	47.1	49.5	51.7	c	41 47.17	56 20 10.0 27.8	III 46.450	12 42 48.58	17 32 30.61	17 3713
54	9.3	6.7	8.9	11.0	13.2	15.4	c	44 11.05	56 50 10.0 28.9	V 46.340	12 45 12.49	18 2 31.97	17 3715
55	9.4	7.7	9.9	12.0	13.9	15.8	e	44 41.90	56 50 " "	VII A 49.025	12 45 43.35	18 6 37.33	17 3717
56	9.0	50.0	52.2	54.5	56.6	58.8	c	46 54.43	56 44 10.0 27.7	V 48.905	12 47 55.89	17 57 19.58	17 3723
57	9.0	36.3	38.3	40.7	42.9	45.0	c	47 40.65	56 18 10.0 27.0	V 43.310	12 48 42.10	17 29 31.29	17 3725
58	8.7	8.0	10.2	12.1	14.0	16.0	e	47 42.21	56 18 " "	VII 43.730	12 48 43.66	17 29 40.71	17 3726
59	9.5	49.7	52.0	54.1	56.1	58.2	c	49 54.03	57 0 10.0 29.2	III 46.795	12 50 55.52	18 12 39.01	17 3736
60	9.5	16.2	18.3	20.2	22.4	24.4	a	51 50.10	56 24 10.0 28.1	I 46.820	12 52 51.58	−17 36 34.98	−17 3742
61	9.1	8.0	9.8	11.8	13.8	16.0	a	52 41.61	55 58 10.0 27.3	I 47.050	12 53 43.08	−17 10 37.58	−16 3576
62	9.3	20.9	22.8	24.7	26.8	28.9	a	53 54.69	56 48 10.0 28.4	I 48.150	12 54 56.20	18 1 1.43	17 3749
63	8.1	17.9	19.8	21.8	23.7	25.9	a	54 51.61	56 22 10.0 27.7	I 48.260	12 55 53.11	17 35 1.72	17 3751
64	8.0	58.5	0.7	2.9	5.0	7.3	c	55 2.89	56 8 10.0 27.8	V 46.730	12 56 4.38	17 20 35.38	17 3752
65	9.2	55.3	57.6	59.4	1.5	3.4	e	55 29.61	56 8 " "	V 46.960	12 56 31.10	17 20 39.70	17 3753
66	8.5	57.5	59.8	1.7	3.6	5.7	e	56 31.74	56 42 10.0 28.4	VII 44.670	12 57 33.26	17 53 59.42	17 3757
67	9.0	50.8	53.0	55.1	56.9	58.9	e	57 25.13	56 6 10.0 28.0	VII B 42.240	12 58 26.64	17 13 58.48	16 3590
68	9.4	27.3	29.4	31.5	35.8	37.3	c_3 d_2	58 27.23	56 6 " "	VI A 48.520	12 59 28.75	17 22 22.66	17 3766
69	8.9	21.6	23.7	25.7	28.0	30.3	c	59 25.87	57 10 10.0 28.1	V B 40.255	13 0 27.44	18 17 22.46	18 3539
70	9.0	1.0	3.1	5.2	7.5	9.7	c	0 5.31	57 10 " "	V A 43.540	13 1 6.89	−18 24 50.29	−18 3540

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
71	9.6	34.7	37.0	39.0	40.9	43.0	e	2 9.16	55 42 10.0 28.2	VII	45.950	13 3 10.69	—16 54 19.89	—16 3604
72	8.9	31.7	34.1	35.8	37.8	39.8	e	3 6.11	55 30 10.0 27.6	V	44.610	13 4 7.64	16 41 51.91	16 3607
73	9.5	24.4	26.6	28.6	30.4	32.4	e	3 58.55	56 46 10.0 28.3	V	44.025	13 5 0.14	17 57 44.82	17 3783
74	9.3	14.3	16.4	18.7	20.9	23.0	c	5 18.67	56 6 9.2 26.7	III	45.570	13 6 20.24	17 18 9.14	17 3786
75	8.1	59.9	2.2	4.3	6.5	8.7	c	7 4.33	57 6 10.0 28.8	III	44.050	13 8 5.96	18 17 44.51	18 3562[1]
76	8.4	30.6	32.8	34.8	36.8	38.8	e	7 4.77	57 6 " "	VII	43.600	13 8 6.40	18 17 38.99	18 3562[2]
77	9.2	46.9	49.5	51.5	53.9	56.0	c	8 51.57	57 10 10.0 28.4	V	49.250	13 9 53.22	18 23 24.86	18 3567
78	9.3	10.9	12.8	14.7	16.5	18.9	a	10 44.52	56 10 10.0 27.6	III	46.620	13 11 46.13	17 22 29.28	17 3808
79	9.3	6.5	8.4	10.0	12.1	14.4	(a)	11 39.87	55 6 10.0 27.6	III	47.650	13 12 41.43	16 18 45.66	16 3633
80	9.2	54.6	56.7	59.0	1.0	3.0	c	13 58.87	56 26 10.0 27.8	V	47.530	13 15 0.52	—17 38 48.67	—17 3823
81	8.1	48.7	50.6	52.7	54.5	56.8	a	15 22.56	57 0 10.0 28.3	I	48.400	13 16 24.26	—18 13 3.55	—17 3829
82	6.5	4.3	6.1	8.2	10.2	12.4	a	16 37.97	56 4 9.3 26.7	I B	44.965	13 17 39.62	17 12 41.65	16 3650
83	9.1	37.4	39.5	41.6	43.7	46.0	c	16 41.65	56 4 " "	III A	46.670	13 17 43.31	17 19 41.30	17 3839
84	9.3	0.1	2.0	4.3	6.4	8.7	c	27 4.31	56 48 10.0 27.6	V	44.540	13 28 6.08	17 59 50.40	17 3883
85	9.1	56.9	59.1	1.1	3.3	5.5	c	28 1.19	55 38 10.0 26.5	III	46.115	13 29 2.00	16 50 14.44	16 3697
86	9.3	59.6	1.7	3.8	6.0	8.3	c	29 3.89	55 12 10.0 27.6	V B	42.570	13 30 5.57	16 19 55.27	16 3702
87	8.4	31.6	33.9	35.7	37.6	39.7	e	29 6.02	55 12 " "	VII	47.440	13 30 7.71	16 24 41.80	16 3704
88	9.4	41.5	43.8	45.9	48.0	50.1	c	30 45.87	55 36 10.0 27.0	III	46.790	13 31 47.60	16 48 26.90	16 3708
89	9.2	25.4	27.5	29.4	31.4	33.6	a	31 59.21	56 6 10.0 28.0	III	44.560	13 33 0.98	17 17 46.20	17 3895
90	9.2	43.3	45.3	47.2	49.2	51.2	a	33 16.81	54 58 10.0 26.5	I	42.530	13 34 18.52	—16 9 1.34	—15 3713
91	9.2	29.6	31.7	33.9	36.2	38.5	c	33 33.99	56 40 10.0 28.5	V	48.130	13 34 35.81	—17 52 57.47	—17 3899
92	8.3	19.9	22.0	24.3	26.5	28.6	c	34 24.27	56 4 10.0 28.4	V	48.870	13 35 26.06	17 17 9.47	17 3903
93	9.0	18.7	20.5	22.5	24.5	26.7	a	36 52.36	56 20 10.0 28.1	I	40.585	13 37 54.18	17 30 28.45	17 3910
94	9.2	40.9	42.8	45.1	46.6	48.9	a	37 14.65	56 20 " "	I A	45.270	13 38 16.48	17 35 10.78	17 3914
95	8.4	30.2	32.1	34.0	36.0	38.3	a	38 3.89	56 20 " "	I B	36.800	13 39 5.71	17 26 3.87	17 3918
96	9.0	14.9	17.4	19.3	21.1	23.0	e	39 49.28	56 20 " "	VII (B)	50.400	13 40 51.12	—17 30 27.08	—17 3926

Reduction Elements. Zone 44.

	OBSERVED.			ADOPTED.		
1894.	c	b	a	c	b	a
	s	s	s	s	s	s
May 3.3....	+0.186	—0.325	—0.254	+0.220	—0.352	—0.236
3.5....	+0.255	—0.380	—0.217			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		δ Crateris		κ Crateris		θ Crateris		ζ Crateris		λ Hydrae		α Virginis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		53 2 3.50		50 36 3.90		48 2 3.60		56 36 4.30		61 26 3.35		49 26 3.50	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	46.190	5 54.66	46.985	6 9.94	48.870	6 46.32	43.735	5 8.66		5 55.77	47.340	6 16.96
II	Red. to Mer......	.080	1.67	.910	1.69	.840	1.71	.665	1.63	46.210	1.60	.280	1.70
VI	Inclination	45.930		.710		.660		.540		.050	0.82	.105	
VII	Refraction	.910	1 14.6	.725	1 8.4	.610	1 2.5	.500	1 25.1	.000	1 43.5	.080	1 6.0

		73 Virginis		89 Virginis	
		° ′ ″		° ′ ″	
CIRCLE READING.		57 0 4.00		56 26 3.75	
		r	′ ″	r	′ ″
I	Microm. Eq......	47.700	6 23.46	45.970	5 51.25
II	Red. to Mer......	.610	1.63	.920	1.63
VI	Inclination	.410		.780	
VII	Refraction	.450	1 26.9	.725	1 25.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Crateris..........	11 13 19.65	11	—0.19	+44.33	53 9 14.4	43.6
κ Crateris..........	11 21 6.38	11	—0.19	+44.35	50 43 23.9	43.9
λ Draconis..........	11 24 26.95	11	+0.12	[+44.41]	329 0	....
θ Crateris..........	11 30 35.51	11	—0.19	+44.43	48 9 54.1	44.0
ζ Crateris..........	11 38 40.61	11	—0.18	+44.41	56 42 39.7	43.8
γ Hydrae..........	13 12 27.08	11	—0.17	+44.46	61 33 45.0	43.9
α Virginis..........	13 18 54.13	11	—0.19	+44.45	49 33 28.2	44.1
Groombridge 2001 .	13 22 47.47	11	+0.20	[+44.40]	326 0	....
73 Virginis..........	13 25 37.45	11	—0.18	+44.45	57 7 56.0	43.4
89 Virginis..........	13 43 24.36	11	—0.18	+44.45	56 33 21.8	43.7

h s
11.430..........*dt*........................ +44.380
Hourly rate............ + 0.0362

° ′ ″
Adopted Equator Point..........38 56 43.80

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
11 8	29.915	68.9	67.9
11 41	29.915	68.2	67.3
12 47	29.915	66.5	66.1
13 43	29.925	65.5	64.0

Note.
77. Close double; equal components.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.187	11 0	+16.664	+16.635	+16.606	+16.576	+16.545	+16.515
53	0.185	11 30	+16.748	16.737	16.726	16.715	16.703	16.691
54	0.184	12 0	......	16.855	16.861	16.870	16.876	16.883
55	0.182	12 30	......	16.987	17.012	17.036	17.062	17.086
56	0.181	13 0	......	+17.129	+17.172	17.215	17.257	17.301
57	−0.179	13 30	......	......	......	17.399	17.459	17.520
		14 0	......	......	......	+17.588	+17.664	+17.740

APPARENT RIGHT ASCENSION.	$D=$Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
11 0	−12.30	−12.57	−12.83	−13.09	−13.35	−13.61	72.84	75.53	78.33	81.28	84.37	87.64
11 30	−13.30	13.54	13.78	14.01	14.25	14.48	72.91	75.60	78.40	81.36	84.45	87.72
12 0	.....	14.37	14.58	14.79	14.99	15.20	73.00	75.68	78.49	81.45	84.55	87.82
12 30	.....	15.06	15.24	15.42	15.59	15.76	73.08	75.77	78.58	81.55	84.64	87.92
13 0	.....	−15.58	−15.72	15.87	16.01	16.14	73.20	75.89	78.70	81.68	84.78	88.06
13 30	.....	.....	.....	16.16	16.26	16.36	73.38	76.09	78.90	81.88	85.00	88.29
14 0	.....	.....	.....	−16.25	−16.31	−16.37	73.55	76.26	79.09	82.07	85.19	88.49

1894 MAY 7. ZONE 45. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.0	51.4	53.1	55.3	57.1	59.2	a	37 24.56	53 16 10.0 26.9	I	49.410	11 38 26.55	−14 29 16.64	−14 3388
2	9.0	35.1	37.4	39.6	41.8	43.9	c	37 39.57	55 46 10.0 27.6	III	46.700	11 38 41.55	16 58 33.74	16 3313
3	9.2	59.2	1.5	3.7	5.8	7.9	c	38 3.63	55 46 " "	V	42.490	11 39 5.61	16 57 15.23	16 3316
4	9.1	39.7	41.6	43.7	45.6	47.9	a	47 13.60	57 0 10.0 28.6	I	46.640	11 48 15.63	18 12 34.98	17 3494
5	7.5	11.2	13.3	15.4	17.6	19.8	c	47 15.47	54 50 10.0 27.8	III	45.590	11 48 17.50	16 2 10.31	15 3375
6	9.0	58.3	0.0	2.1	4.0	6.1	a	54 31.54	54 6 10.0 27.0	I	46.400	11 55 33.60	15 18 21.61	15 3402
7	8.7	18.8	20.5	22.5	24.6	26.7	a	3 52.16	54 44 10.0 27.0	I	48.430	12 4 54.29	15 57 1.74	15 3425
8	8.8	3.9	5.6	7.4	9.5	11.6	a	4 36.92	53 10 10.0 26.3	I	47.510	12 5 39.03	14 22 39.86	14 3469
9	8.0	39.6	41.4	43.2	45.2	47.3	a	5 12.92	55 2 10.0 27.8	I	44.990	12 6 15.05	16 13 57.41	15 3429
10	9.1	52.3	54.2	56.5	58.7	0.8	c	5 56.51	55 40 10.0 27.9	III	47.330	12 6 58.65	−16 52 45.55	−16 3412
11	9.0	25.1	27.4	29.2	31.1	33.0	e	5 59.25	56 38 10.0 27.9	VII	45.695	12 7 1.41	−17 50 20.25	−17 3571
12	9.2	56.7	58.7	0.9	3.1	5.3	c	9 0.95	54 10 10.0 26.9	III	48.110	12 10 3.09	15 22 55.75	15 3437
13	9.2	38.4	40.1	42.0	44.1	46.3	a	10 11.63	54 10 " "	I	46.280	12 11 13.78	15 22 19.04	15 3440
14	6.0	47.4	49.4	51.6	53.8	56.0	c	10 51.65	54 56 10.0 27.2	III	45.960	12 11 53.81	16 8 16.94	15 3442
15	8.9	22.0	24.0	26.2	28.5	30.8	c	11 26.31	54 56 " "	III	43.040	12 12 28.47	16 7 21.33	15 3444
16	8.8	27.8	29.9	32.1	34.2	36.3	c	12 32.07	55 8 10.0 27.6	III B	43.150	12 13 34.24	16 16 11.79	16 3439
17	9.2	5.8	7.4	9.3	11.3	13.5	a	15 39.09	55 24 10.0 27.3	I	43.940	12 16 41.29	16 35 37.76	16 3445
18	8.8	58.7	0.5	2.3	4.5	6.7	a	16 31.87	53 16 10.0 26.4	I	48.020	12 17 34.03	14 28 49.35	14 3503
19	8.5	49.5	51.4	53.4	55.3	57.6	a	17 23.00	54 56 10.0 26.6	I	43.850	12 18 25.20	16 7 34.33	15 3459
20	9.4	57.1	59.6	1.6	3.4	5.4	e	17 31.63	55 54 10.0 27.8	V	46.960	12 18 33.85	−17 6 40.25	−16 3454
21	8.5	32.2	34.5	36.7	38.8	41.2	c	18 36.69	56 50 10.0 28.4	V	44.210	12 19 38.93	−18 1 50.89	−17 3616
22	9.0	28.9	31.1	35.3	36.8	39.7	c_4 d_3	19 26.75	56 10 10.0 27.4	VI	48.590	12 20 28.98	17 23 12.48	17 3620
23	8.0	11.1	13.5	15.3	17.1	19.2	e	19 45.41	56 10 " "	VII	46.455	12 20 47.64	17 22 32.50	17 3621
24	7.8	51.0	53.3	55.4	59.4	1.0	c_3 d_2	22 51.03	54 42 10.0 27.2	V B	43.700	12 23 53.25	15 50 21.89	15 3476
25	8.8	33.8	35.8	38.1	40.3	42.5	c	23 38.11	54 42 " "	V A	47.060	12 24 40.34	15 57 51.15	15 3481
26	3.0	4.9	6.9	8.8	10.5	12.7	e	23 39.15	54 42 " "	VII A	45.980	12 24 41.38	15 57 31.90	15 3482
27	8.7	48.8	50.9	55.2	56.9	59.6	c_4 d_3	24 46.73	54 42 " "	VI	50.140	12 25 48.96	15 55 37.46	15 3485
28	8.5	22.8	25.0	27.1	29.3	31.4	c	26 27.13	55 28 10.0 27.5	V	45.380	12 27 29.39	16 40 8.25	16 3488
29	9.3	33.0	35.1	37.3	39.4	41.6	c	27 37.29	55 18 10.0 27.4	III B	43.230	12 28 39.55	16 26 12.78	16 3495
30	7.7	6.0	8.1	9.9	11.9	13.8	e	27 40.24	55 18 " "	VII A	39.780	12 28 42.50	−16 31 35.35	−16 3496
31	9.0	3.5	5.7	7.5	9.5	11.4	e	28 37.86	55 2 10.0 27.2	VII	47.610	12 29 40.12	−16 14 50.60	−15 3500
32	7.0	23.8	26.0	28.1	30.2	32.3	c	29 28.09	55 2 " "	V A	42.880	12 30 30.36	16 16 32.05	16 3499
33	8.7	6.5	8.5	10.3	12.2	14.4	a	30 39.95	55 2 " "	III B	49.850	12 31 42.22	16 12 17.69	15 3506
34	9.3	40.0	41.8	43.6	45.8	48.0	a	32 13.56	55 56 10.0 27.4	I	47.260	12 33 15.86	17 8 41.39	16 3506
35	9.3	3.4	5.2	7.2	9.0	11.4	a	32 36.95	55 56 " "	I B	46.340	12 33 39.25	−17 5 11.59	−16 3509

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
36	8.7	10.4	12.2	14.2	16.2	18.4	a	33 44.00	55 56 10.0 27.4	I	45.340	12 34 46.31	−17 8 4.71	−16 3513
37	8.9	49.9	51.8	54.0	56.3	58.4	c	33 54.09	55 56 " "	III A	41.025	12 34 56.40	17 9 57.50	16 3514
38	9.5	49.1	51.2	53.5	55.7	57.8	c	34 53.47	56 54 10.0 28.5	V	46.920	12 35 55.82	18 6 41.55	17 3683
39	7.6	57.4	59.6	1.8	3.8	6.0	c	36 1.73	53 24 10.0 26.4	V B	42.900	12 37 3.98	14 32 1.82	14 3557
40	7.8	34.2	36.5	38.5	40.2	42.4	e	36 8.92	53 24 " "	VII A	51.980	12 37 11.18	−14 41 21.34	−14 3559
41	8.9	19.0	20.8	22.7	24.6	26.8	a	38 52.10	53 8 10.0 26.0	I	48.380	12 39 54.36	−14 20 53.91	−14 3568
42	9.1	25.1	27.1	29.0	31.1	33.3	a	39 58.69	54 58 10.0 27.6	I	48.750	12 41 1.01	16 11 6.41	15 3528
43	8.5	15.0	16.9	18.8	20.8	22.9	a	41 48.52	55 24 10.0 27.2	I	48.070	12 42 50.87	16 36 54.27	16 3535
44	8.9	34.8	36.6	38.6	40.7	42.8	a	43 8.34	55 24 " "	I A	43.700	12 44 10.70	16 38 44.18	16 3540
45	8.2	4.9	7.0	9.1	11.4	13.6	c	43 9.21	55 24 " "	III	45.155	12 44 11.56	16 36 0.50	16 3541
46	9.1	7.4	9.5	11.8	13.8	16.1	c	44 11.73	57 8 10.0 27.5	III	46.580	12 45 14.15	18 20 32.75	18 3477
47	8.0	1.3	3.1	5.2	7.1	9.4	a	45 35.15	57 8 " "	III A	47.260	12 46 37.58	18 23 58.66	18 3483
48	8.1	20.3	22.1	24.1	26.1	28.3	a	46 53.82	55 26 10.0 26.9	I	49.500	12 47 56.20	16 39 20.90	16 3557
49	8.8	53.3	55.1	57.0	58.9	1.1	a	47 26.72	55 26 " "	I	49.025	12 48 29.10	16 39 11.79	16 3560
50	8.8	53.6	55.4	57.3	59.4	1.4	a	48 27.25	56 34 10.0 27.5	I A	43.320	12 49 29.68	−17 48 39.88	−17 3730
51	8.9	19.1	21.1	23.0	25.1	27.4	a	49 52.95	56 34 " "	I B	43.040	12 50 55.38	−17 42 8.89	17 3737
52	8.0	15.5	17.5	19.7	21.9	24.1	c	50 19.75	54 58 10.0 27.3	III	48.620	12 51 22.13	16 11 4.44	15 3558
53	9.0	11.1	12.9	14.8	16.9	18.9	a	51 44.48	54 58 " "	I B	44.120	12 52 46.87	16 6 24.54	15 3562
54	7.9	47.1	49.1	51.4	53.5	55.7	c	51 51.37	54 58 " "	III A	47.240	12 52 53.76	16 13 51.09	15 3563
55	7.6	34.1	35.9	37.8	39.8	42.1	a	53 7.49	54 48 10.0 26.9	III	44.180	12 54 9.88	15 59 38.90	15 3568
56	8.8	39.9	42.0	44.1	46.5	48.5	c	53 44.21	54 14 10.0 26.4	V B	50.170	12 54 46.58	15 24 20.34	15 3573
57	8.9	43.4	45.3	47.3	49.3	51.5	a	55 16.83	54 14 " "	I	48.690	12 56 19.21	15 27 0.91	15 3579
58	8.9	50.9	52.6	54.5	56.5	58.8	a	56 24.13	54 14 " "	I A	45.540	12 57 26.51	15 29 13.99	15 3584
59	9.0	19.2	20.9	22.7	24.9	26.9	a	57 52.34	53 58 10.0 25.6	III B	47.990	12 58 54.72	15 7 35.59	14 3632
60	7.5	2.0	4.0	6.1	8.3	10.5	c	59 6.19	55 16 10.0 27.2	V	45.340	13 0 8.63	−16 28 3.25	−16 3597
61	9.1	9.8	12.0	13.9	15.7	17.7	e	59 44.44	53 10 10.0 26.5	V B	42.100	13 0 46.79	−14 17 43.18	−14 3643
62	7.0	33.0	35.5	37.4	39.3	41.2	e	0 7.89	53 10 " "	VII	48.135	13 1 10.25	14 22 51.84	14 3644
63	9.2	41.9	44.1	46.0	48.4	50.5	c	1 46.19	54 58 10.0 26.5	V	40.680	13 2 48.63	16 8 32.99	15 3599
64	9.0	13.8	15.6	17.5	19.4	21.8	a	2 47.19	54 58 " "	III A	44.690	13 3 49.64	16 13 0.66	15 3605
65	8.6	12.1	13.9	16.0	18.0	20.3	a	3 45.98	57 10 10.0 28.8	III	44.830	13 4 48.54	18 21 57.69	18 3547
66	8.9	12.4	14.1	16.3	18.1	20.5	a	4 46.19	57 10 " "	I B	36.880	13 5 48.75	18 16 12.08	18 3553
67	5.5	8.3	10.0	12.1	14.0	16.3	a	5 41.64	54 28 10.0 27.0	I	44.030	13 6 44.09	15 39 31.61	15 3613
68	8.7	21.5	23.5	25.3	27.4	29.4	a	6 54.81	53 44 10.0 26.3	I	44.900	13 7 57.23	14 55 45.67	14 3665
69	8.8	47.8	49.6	51.6	53.5	55.8	a	7 21.05	53 44 " "	I B	43.680	13 8 23.47	14 52 10.16	14 3668
70	8.7	54.9	56.8	58.7	0.7	2.8	a	8 28.12	53 16 10.0 26.4	I A	39.840	13 9 30.53	−14 29 21.19	−14 3671
71	9.1	44.0	45.9	47.8	49.8	51.9	a	9 17.21	53 16 " "	I	43.360	13 10 19.62	−14 27 14.82	−14 3674
72	9.6	50.0	51.9	54.0	56.4	58.5	c	9 54.17	55 0 10.0 26.5	III B	44.110	13 10 56.67	16 8 23.17	15 3629
73	9.0	11.6	13.6	15.8	18.0	20.1	c	10 15.83	55 0 " "	V A	42.120	13 11 18.34	16 14 12.17	15 3633
74	9.0	27.7	29.5	31.5	33.5	35.8	a	15 1.06	54 14 10.0 25.7	III	46.650	13 16 3.55	15 26 20.46	15 3652
75	9.1	55.9	57.8	59.6	1.8	3.8	a	15 29.23	54 14 " "	III B	45.050	13 16 31.72	15 22 37.63	15 3653
76	8.9	10.8	12.7	14.8	16.7	18.9	a	16 44.24	54 14 " "	I B	50.440	13 17 46.74	15 24 18.25	15 3656
77	8.4	14.6	16.6	18.7	20.8	22.9	c	17 18.73	53 28 10.0 25.6	III B	42.030	13 18 21.19	14 35 37.76	14 3713
78	9.0	47.5	49.7	51.7	53.8	56.0	c	17 51.75	53 28 " "	III	47.580	13 18 54.22	14 40 35.60	14 3714
79	9.3	41.8	43.8	46.0	48.2	50.5	c	18 46.07	54 28 10.0 26.0	V	44.295	13 19 48.59	15 39 37.39	15 3660
80	9.4	43.8	45.7	47.5	49.4	51.9	a	20 17.15	54 28 " "	I B	40.290	13 21 19.68	−15 35 5.18	−15 3666
81	9.0	48.0	50.1	52.5	54.6	56.6	c	20 52.37	55 22 10.0 27.0	III A	43.080	13 21 54.96	−16 36 28.36	−16 3666
82	9.7	28.6	30.6	32.9	35.2	37.6	c	21 32.99	55 22 " "	V A	48.120	13 22 35.58	16 38 5.70	16 3667
83	9.1	6.9	9.2	11.3	13.4	15.5	c	22 11.27	55 22 " "	V B	41.180	13 23 13.86	16 29 28.10	16 3668
84	8.6	0.6	2.4	4.5	6.4	8.7	a	24 34.39	56 48 10.0 27.3	I	45.420	13 25 37.08	18 0 1.67	17 3872
85	6.5	2.7	4.6	6.6	8.5	10.8	a	25 36.54	57 0 10.0 27.5	I	47.850	13 26 39.25	18 12 48.43	17 3877
86	9.3	9.8	11.6	13.5	15.4	17.5	a	26 42.91	53 24 10.0 25.8	I	44.760	13 27 45.42	14 35 38.36	14 3741
87	9.5	34.0	35.4	37.3	39.5	41.6	a	28 6.89	53 12 10.0 26.0	I	49.320	13 29 9.40	14 25 4.46	14 3745
88	9.6	37.8	39.6	41.2	43.3	45.4	a	29 10.77	53 12 " "	I B	40.750	13 30 13.27	14 19 8.89	14 3749
89	8.7	15.0	17.3	19.4	21.6	23.5	c	29 19.37	53 12 " "	V A	49.290	13 30 21.88	14 28 20.04	14 3750
90	8.2	4.5	6.1	8.0	10.0	12.3	a	30 37.72	54 44 10.0 25.9	III	46.190	13 31 40.33	−15 56 10.21	15 3705
91	9.2	13.3	15.5	17.6	19.6	21.9	c	31 17.59	52 58 10.0 25.6	III A	45.700	13 32 20.10	−14 13 9.00	−13 3734
92	8.0	.....	41.9	46.0	47.7	50.3	c_5 d_3	31 37.64	52 58 " "	VI B	40.130	13 32 40.14	14 4 59.80	13 3737
93	9.1	24.0	26.2	28.4	30.6	32.8	c	32 28.41	52 58 " "	III B	37.880	13 33 30.92	14 4 14.50	13 3739
94	8.6	32.1	34.0	35.9	37.9	40.1	a	34 5.68	55 38 10.0 26.6	I	46.230	13 35 8.37	16 50 11.34	16 3718
95	8.5	39.4	41.1	43.2	45.3	47.3	a	35 12.93	55 38 " "	I	42.950	13 36 15.62	16 49 8.68	16 3723
96	9.1	33.9	35.7	37.6	39.6	41.8	a	36 7.38	55 38 " "	I B	43.310	13 37 10.07	16 46 3.08	16 3729
97	9.2	3.5	5.1	7.1	9.1	11.4	a	37 36.57	53 8 10.0 26.5	I A	50.560	13 38 39.12	14 24 39.34	14 3786
98	6.7	24.0	25.9	27.8	29.7	31.9	a	37 57.16	53 8 " "	III B	41.725	13 38 59.70	14 15 27.38	14 3787
99	8.0	11.0	12.7	14.6	16.6	18.7	a	38 44.02	53 8 " "	I B	43.210	13 39 46.57	14 15 53.74	14 3792
100	9.4	40.9	42.8	44.6	46.4	48.7	a	40 14.03	53 24 10.0 26.0	I	46.455	13 41 16.61	−14 36 7.85	−14 3797
101	9.1	30.9	32.9	34.7	36.6	39.0	a	41 4.11	53 0 10.0 25.9	I B	47.400	13 42 6.66	−14 9 12.32	−13 3769
102	9.1	55.3	57.1	59.1	1.1	3.2	a	42 28.46	53 0 " "	I A	41.050	13 43 31.02	14 13 36.57	14 3806
103	8.8	21.7	23.4	25.1	27.1	29.3	a	42 54.62	53 0 " "	I A	48.115	13 43 57.19	14 15 50.96	14 3808
104	8.0	16.4	18.3	20.0	22.2	24.4	a	45 49.55	53 2 10.0 26.2	I B	46.640	13 46 52.13	14 10 57.00	13 3782
105	9.2	6.7	8.7	10.6	12.6	14.8	a	46 39.98	53 2 " "	I	49.460	13 47 42.57	14 15 2.70	14 3822
106	8.0	52.4	54.3	56.1	58.0	0.3	a	47 25.51	53 2 " "	I (B)	44.545	13 48 28.09	14 10 16.74	13 3786
107	9.0	4.1	5.9	7.8	9.8	12.0	a	48 37.32	53 50 10.0 26.1	I	45.210	13 49 39.97	15 1 43.40	14 3827
108	8.0	35.4	37.4	39.3	41.5	43.6	a	49 8.94	54 28 10.0 25.8	I	43.470	13 50 11.63	15 39 11.69	15 3770
109	9.1	12.4	14.5	16.6	18.8	21.0	c	49 16.67	54 28 " "	III (B)	38.070	13 50 19.36	15 34 18.38	15 3771
110	9.2	56.1	58.3	0.4	2.6	4.8	(c)	50 0.45	54 28 " "	III A	43.345	13 51 3.15	−15 42 24.04	−15 3774

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
111	9.0	10.8	13.0	15.2	17.4	19.5	c	51 15.19	54 12	10.0	25.9	III	47.935	13 52 17.88	−15 24 37.33	−15 3777
112	8.9	14.0	16.1	18.1	20.4	22.4	c	52 18.21	54 14	10.0	25.6	III	42.955	13 53 20.91	15 25 2.23	15 3781
113	8.1	28.2	29.9	31.8	33.8	36.0	a	54 1.27	53 16	10.4	25.0	I	46.190	13 55 3.91	14 27 58.88	14 3846
114	9.0	11.0	12.9	14.8	16.7	18.8	a	54 44.16	53 16	“	“	I B	38.910	13 55 46.79	14 22 27.91	14 3849
115	8.9	34.0	36.0	37.8	39.9	42.2	a	56 7.66	55 40	10.0	26.9	I	47.840	13 57 10.49	16 52 37.16	16 3784
116	5.8	1.0	2.8	4.8	6.8	8.9	a	56 34.54	55 40	“	“	I (A)	39.330	13 57 37.37	16 53 8.27	16 3785
117	9.1	58.9	0.7	2.5	4.4	6.8	a	57 32.00	53 22	10.0	25.0	III	42.445	13 58 34.66	14 32 48.58	14 3860
118	6.0	55.1	57.1	59.3	1.5	3.7	c	57 59.35	53 22	“	“	III B	42.070	13 59 2.01	14 29 29.02	14 3863
119	8.9	42.2	44.3	46.4	48.6	50.8	c	58 46.47	53 22	“	“	III A	49.400	13 59 49.14	14 38 13.72	14 3866
120	7.5	10.8	12.8	14.5	16.6	18.7	a	0 44.19	54 30	10.0	26.0	I	48.760	14 1 46.96	−15 42 49.70	−15 3809
121	9.1	17.1	19.1	20.9	23.0	25.2	a	1 50.62	54 54	10.0	26.2	I	45.480	14 2 53.42	−16 5 48.20	−15 3812
122	8.6	54.5	56.4	58.3	0.2	2.5	a	2 28.25	56 50	10.0	26.8	III	44.490	14 3 31.20	18 1 37.10	17 4015
123	9.4	6.7	8.7	10.6	12.5	14.7	a	3 40.02	53 36	10.0	26.2	I	42.250	14 4 42.73	14 46 42.67	14 3888
124	9.4	50.0	51.9	53.7	55.7	57.9	a	4 23.21	53 36	“	“	I B	41.710	14 5 25.92	14 43 19.95	14 3892
125	9.1	11.4	13.1	14.9	16.8	19.1	a	4 44.43	53 36	“	“	I B	44.910	14 5 47.14	14 44 20.76	14 3893
126	9.5	55.6	57.4	59.4	1.4	3.4	a	5 28.82	53 36	“	“	I	48.500	14 6 31.54	14 48 41.16	14 3896
127	9.4	34.7	36.6	38.8	41.1	43.2	c	5 38.89	53 36	“	“	III A	48.245	14 6 41.62	14 51 51.16	14 3897
128	8.9	26.9	28.9	31.1	33.2	35.4	c	11 31.11	53 2	10.0	25.4	III	48.570	14 12 33.83	14 14 40.73	14 3917
129	8.8	2.7	4.5	6.4	8.4	10.6	a	12 35.80	52 52	10.0	25.3	III	46.390	14 13 38.51	14 3 58.44	13 3868
130	9.5	11.1	13.1	15.3	17.5	19.7	c	13 15.35	55 10	10.0	27.1	V	44.550	14 14 18.25	−16 21 32.10	−16 3840
131	9.2	25.1	27.2	29.4	31.6	33.8	c	14 29.43	55 10	“	“	III A	46.950	14 15 32.34	−16 25 28.91	−16 3845
132	9.3	28.6	30.8	32.7	34.5	36.6	e	15 3.05	54 36	10.0	25.4	VII	45.100	14 16 5.91	−15 47 41.01	−15 3858

Reduction Elements. Zone 45.

1894.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
May 7.3....	+0.164	−0.355	−0.320	+0.194	−0.340	−0.334
7.5....	+0.225	−0.324	−0.348			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	δ Crateris		γ Crateris		θ Crateris		η Crateris		γ Hydrae		89 Virginis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	53 2 3.70		55 56 3.75		48 2 3.65		55 24 3.85		61 26 3.40		56 26 3.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq.....	46.270	5 56.62	45.250	5 37.56	48.970	6 48.48	43.940	5 12.36	46.415	5 59.46		5 51.46
II | Red. to Mer......	.205	1.67	.190	1.64	.940	1.71	.865	1.65	.380	1.57		1.63
VI | Inclination......	.040		.045		.780		.740		.185		45.880	2.04
VII | Refraction.......	.010	1 13.3	.030	1 21.5	.740	1 1.5	.670	1 20.1	.145	1 42.1	.840	1 24.0

	ι Virginis		2 Librae	
	° ′ ″		° ′ ″	
CIRCLE READING.	44 20 2.75		50 4 3.10	
	r	′ ″	r	′ ″
I | Microm. Eq......		5 42.42	45.140	5 35.64
II | Red. to Mer......	45.495	1.76	.150	1.70
VI | Inclination	.370	0.82	44.960	
VII | Refraction	.290	54.6	.860	1 6.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Crateris...........	11 13 18.59	11	−0.29	+45.45	53 9 15.3	44.4
γ Crateris...........	11 18 51.35	11	−0.29	+45.41	56 3 4.5	43.7
λ Draconis...........	11 24 25.63	11	+0.22	[+45.46]	329 0	....
θ Crateris...........	11 30 34.46	11	−0.28	+45.55	48 9 55.3	45.2
η Crateris...........	11 49 53.06	11	−0.29	+45.59	55 30 38.0	44.7
γ Hydrae	13 12 26.14	11	−0.28	+45.51	61 33 46.5	45.1
89 Virginis	13 43 23.40	11	−0.28	+45.54	56 33 22.9	44.7
4 Ursae Minoris....	14 8 37.84	7	+0.68	[+45.57]	320 54	....
ι Virginis	14 9 44.15	11	−0.28	+45.50	44 26 42.4	46.2
2 Librae............	14 17 0.18	11	−0.29	+45.54	50 10 47.2	44.2

h		s
11.468..........	*dt*......................	+45.500
	Hourly rate	+ 0.0093
		° ′ ″
	Adopted Equator Point..........	38 56 44.78

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
11 10	29.675	73.2	72.6
12 9	29.665	71.1	70.2
13 15	29.665	68.9	67.3
14 20	29.655	67.2	65.2

Note.

9. Companion n. p.

Seeing exceedingly good, with occasional indications of very thin clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.286	11 30	......	+16.757	+16.747	+16.736	+16.725	+16.713
53	0.286	12 0	......	16.867	16.874	16.882	16.889	16.896
54	0.286	12 30	......	16.990	17.013	17.040	17.064	17.089
55	0.286	13 0	......	17.120	17.162	17.207	17.248	17.291
56	0.286	13 30	......	17.261	17.320	17.379	17.439	17.499
57	−0.286	14 0	+17.329	17.404	17.480	17.555	17.631	17.706
		14 30	+17.463	+17.553	+17.643	+17.732	+17.823	+17.914

APPARENT RIGHT ASCENSION.	$D =$ Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
11 30	.....	−13.68	−13.95	−14.20	−14.45	−14.69	71.71	74.35	77.11	80.02	83.06	86.28
12 0	.....	14.54	14.77	14.99	15.22	15.44	71.88	74.52	77.29	80.20	83.25	86.48
12 30	.....	15.21	15.41	15.61	15.80	16.00	72.06	74.71	77.48	80.41	83.46	86.70
13 0	.....	15.73	15.90	16.06	16.23	16.38	72.24	74.90	77.68	80.61	83.68	86.92
13 30	.....	16.07	16.20	16.32	16.44	16.57	72.39	75.06	77.84	80.78	83.85	87.10
14 0	−16.13	16.22	16.31	16.40	16.49	16.57	72.53	75.20	77.98	80.93	84.00	87.26
14 30	−16.13	−16.19	−16.23	−16.28	−16.32	−16.36	72.68	75.35	78.14	81.10	84.18	87.44

1894 MAY 9. ZONE 46. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.7	39.4	41.2	43.2	45.2	47.4	a	52 12.67	53 42 10.0 25.6	I	44.520	16 53 17.56	−14 52 24.89	−14 4510
2	8.5	43.8	45.8	47.6	49.7	51.8	a	53 17.36	55 18 10.0 25.9	I	48.230	16 54 22.48	16 29 40.12	16 4389
3	9.8	7.3	9.4	11.1	13.2	15.1	e	57 41.54	55 12 10.0 26.5	VII	49.420	16 58 46.67	16 24 5.58	16 4411
4	9.3	28.8	31.1	33.5	35.6	37.8	c	59 33.37	54 8 10.0 26.1	V	43.830	17 0 38.36	15 18 13.31	15 4449
5	9.4	50.8	53.0	55.2	59.1	0.8	c_3 d_2	0 50.83	52 54 10.0 27.3	V B	42.570	17 1 55.65	14 0 33.27	13 4545
6	9.1	49.2	51.0	52.9	54.9	56.9	a	2 22.27	52 54 " "	III A	48.150	17 3 27.11	14 8 42.61	14 4555
7	9.3	38.3	39.9	42.0	43.9	46.0	a	6 11.32	53 2 10.0 26.3	III	46.680	17 7 16.19	14 12 59.61	14 4571
8	9.4	52.2	54.5	56.5	58.6	0.9	c	6 56.55	54 56 10.0 27.0	III	45.810	17 8 1.68	16 6 48.82	16 4449
9	6.8	1.0	2.9	4.8	6.8	8.8	a	8 34.20	53 18 10.0 26.5	I	44.165	17 9 39.11	14 28 9.66	14 4585
10	7.5	54.8	56.7	58.6	0.5	2.7	a	9 28.08	53 56 10.0 26.3	I	45.780	17 10 33.08	−15 6 41.77	−15 4502
11	9.0	41.4	43.4	45.1	47.1	49.4	a	10 14.57	52 58 10.0 25.5	III	46.720	17 11 19.44	−14 8 57.82	−14 4592
12	8.9	53.4	55.2	57.1	59.0	1.3	a	11 26.56	53 30 10.0 26.0	I	48.340	17 12 31.51	14 41 28.10	14 4598
13	9.0	37.3	39.0	41.1	43.1	45.1	a	13 10.75	55 24 10.0 27.6	I	45.690	17 14 15.98	16 34 43.53	16 4478
14	8.9	25.8	27.5	29.5	31.5	33.5	a	13 58.84	52 58 10.0 26.7	I B	40.145	17 15 3.71	14 3 37.41	14 4615
15	9.2	41.4	43.2	44.9	47.1	49.2	a	15 14.46	52 58 " "	I A	49.140	17 16 19.36	14 12 53.53	14 4620
16	9.0	21.3	23.1	25.4	27.6	29.8	c	15 25.45	54 40 10.0 26.2	V	42.900	17 16 30.57	15 49 49.76	15 4531
17	9.0	0.6	2.4	4.3	6.3	8.5	a	17 33.91	54 32 10.0 26.2	I	48.300	17 18 39.03	15 43 27.68	15 4539
18	9.0	10.7	12.3	14.4	16.4	18.6	a	18 44.08	55 10 10.0 27.4	I	48.030	17 19 49.29	16 21 24.58	16 4508
19	8.2	23.8	25.5	27.5	29.6	31.7	a	19 57.03	53 52 10.0 26.1	I	45.415	17 21 2.06	15 2 29.51	14 4644
20	8.8	39.1	40.9	43.0	44.9	47.0	a	21 12.27	53 0 10.0 26.4	I	47.510	17 22 17.20	−14 11 6.36	−14 4650
21	8.7	59.6	1.5	3.4	5.4	7.6	a	22 32.79	53 0 " "	I	45.985	17 23 37.72	−14 10 36.68	−14 4658
22	8.9	11.8	13.5	15.5	17.5	19.5	a	23 44.93	53 32 10.0 26.1	I	42.920	17 24 49.94	14 41 39.17	14 4665
23	9.0	2.2	4.5	6.5	8.7	11.1	c	24 6.61	54 54 10.0 26.2	III	47.750	17 25 11.81	16 5 17.03	16 4537
24	8.1	25.5	27.8	30.0	32.0	34.2	c	25 29.91	54 54 " "	V B	44.970	17 26 35.11	16 1 12.63	15 4585
25	8.3	19.6	21.6	23.9	26.1	28.2	c	26 23.89	54 54 " "	III	46.030	17 27 29.10	16 4 43.18	16 4550
26	8.9	21.4	23.1	25.1	27.0	29.3	a	27 54.81	55 22 10.0 27.5	III	47.850	17 29 0.09	16 33 19.26	16 4554
27	9.3	55.1	57.1	59.2	1.3	3.7	c	28 59.29	53 58 10.0 26.8	III	47.150	17 30 4.38	15 9 0.65	15 4607
28	9.0	59.6	1.5	3.7	6.0	8.0	c	30 3.77	53(32) 10.0 26.6	III	48.110	17 31 8.80	14 43 17.00	14 4697
29	9.0	49.7	52.0	53.9	55.6	57.5	e	30 24.36	53 4 10.0 26.5	V	44.820	17 31 29.33	14 14 14.39	14 4699
30	9.1	1.1	3.1	4.9	6.9	9.2	a	32 34.55	54 32 10.0 26.6	I	44.600	17 33 39.73	−15 42 10.19	−15 4635
31	8.9	34.1	35.8	37.9	39.9	42.0	a	34 7.24	53 6 10.0 26.4	I B	42.790	17 35 12.22	−14 12 18.30	−14 4724
32	9.1	44.6	46.5	48.3	50.3	52.5	a	35 17.76	53 6 " "	I A	41.590	17 36 22.75	14 18 20.41	14 4733
33	8.8	53.4	55.2	57.2	59.1	1.4	a	36 26.66	53 46 10.0 26.2	I	48.730	17 37 31.75	14 57 24.40	14 4737
34	8.4	30.0	31.8	33.7	35.6	38.0	a	39 3.09	52 48 10.0 27.1	I	47.270	17 40 8.05	−13 58 52.92	−13 4741

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
35	8.9	0.8	2.6	4.5	6.5	8.7	a	39 33.90	52 48 10.0 27.1	I A 48.505	17 40 38.87	−14 2 29.42	−14 4760
36	8.6	45.4	47.6	49.7	53.9	55.4	c_3 d_2	39 45.40	54 48 10.0 26.7	VI 43.380	17 40 50.64	15 57 48.61	15 4675
37	9.4	42.1	43.8	45.7	47.8	50.0	a	41 15.43	54 48 “ “	III 44.660	17 42 20.67	15 58 9.88	15 4683
38	9.4	57.6	59.5	1.4	3.3	5.4	a	43 31.05	55 16 10.0 27.5	I 47.250	17 44 36.37	16 26 58.18	16 4627
39	9.2	53.0	54.8	56.7	58.7	0.8	a	44 26.41	55 16 “ “	I B 44.400	17 45 31.72	16 22 51.24	16 4631
40	9.6	18.3	20.0	21.9	23.9	26.1	a	45 51.63	55 10 10.0 26.9	III B 40.600	17 46 56.93	−16 15 39.33	−16 4644
41	9.4	52.4	54.6	56.6	58.4	0.5	e	46 26.83	55 10 “ “	VII 46.460	17 47 32.15	−16 20 46.03	−16 4647
42	9.8	9.8	11.9	14.0	16.1	18.4	c	48 14.05	55 8 10.0 27.7	V 47.030	17 49 19.37	16 18 54.85	16 4653
43	8.8	13.1	15.1	17.2	21.6	23.1	c_3 d_2	49 13.06	53 12 10.0 26.2	VI 41.740	17 50 18.11	14 21 7.67	14 4824
44	9.2	15.5	17.2	19.3	21.1	23.4	a	51 48.67	53 38 10.0 27.1	I B 38.140	17 52 53.78	14 42 43.19	14 4833
45	9.1	38.4	40.3	42.2	44.3	46.5	a	52 11.73	53 38 “ “	III A 47.860	17 53 16.87	14 52 15.22	14 4836
46	8.2	48.7	50.4	52.3	54.3	56.5	a	53 21.82	53 38 “ “	III 41.550	17 54 26.95	14 47 1.42	14 4842
47	......	29.9	32.0	34.2	36.1	38.4	c	53 34.13	53 2 10.0 26.2	V 44.950	17 54 39.18	14 12 5.41	14 4845
48	6.8	24.7	26.9	28.9	31.2	33.5	c	54 29.05	55 58 10.0 27.3	V 47.880	17 55 34.52	17 9 10.62	17 4987
49	8.9	22.9	25.0	27.1	29.3	31.5	c	55 27.17	55 58 “ “	III 43.120	17 56 32.64	17 7 37.87	17 4996
50	9.3	29.5	31.3	33.3	35.3	37.4	a	57 3.05	55 50 10.0 27.0	I B 42.840	17 58 8.50	−16 56 17.07	−16 4697
51	8.6	10.3	12.1	14.1	16.0	18.2	a	57 43.85	55 50 “ “	I A 41.110	17 58 49.30	−17 2 9.34	−17 5007
52	8.7	4.0	6.0	8.1	10.2	12.5	c	58 8.17	53 34 10.0 27.1	V 42.200	17 59 13.30	14 43 12.91	14 4872
53	8.0	12.3	13.9	16.0	18.1	20.4	a	59 45.54	53 52 10.0 26.7	I B 45.110	18 0 50.71	14 58 53.04	14 4884
54	9.1	48.7	50.6	52.6	54.4	56.7	a	0 22.01	53 52 “ “	I A 40.410	18 1 27.20	15 3 48.24	15 4820
55	8.8	4.4	6.2	8.1	10.0	12.5	a	0 37.64	53 52 “ “	III 38.460	18 1 42.82	14 59 59.59	15 4822
56	9.1	49.0	51.1	53.3	55.4	57.6	c	1 53.29	53 52 “ “	III 45.340	18 2 58.48	15 2 9.95	15 4829
57	8.9	5.1	7.1	9.3	13.5	15.1	c_3 d_2	2 5.04	53 52 “ “	V 48.760	18 3 10.23	15 3 16.59	15 4830
58	8.6	46.1	48.4	50.1	52.1	54.3	e	2 20.71	53 52 “ “	VII 52.460	18 3 25.90	15 4 28.34	15 4834
59	8.1	15.8	17.9	20.0	22.0	24.3	c	4 20.01	54 44 10.0 26.5	III 47.490	18 5 25.33	15 54 52.33	15 4849
60	9.0	18.9	20.9	23.2	25.3	27.4	c	5 23.15	52 52 10.0 27.6	III 44.520	18 6 28.21	−14 1 50.07	−14 4928
61	8.2	54.1	55.9	57.8	59.8	2.0	a	6 27.26	53 18 10.0 26.8	III 43.830	18 7 32.38	−14 27 37.33	−14 4934
62	9.0	52.2	54.1	56.3	58.4	0.7	c	6 56.35	53 2 10.0 26.9	V 45.180	18 8 1.44	14 12 3.69	14 4940
63	9.0	21.8	23.8	25.7	27.6	29.8	a	8 55.12	53 34 10.0 27.1	I 50.950	18 10 0.29	14 45 50.82	14 4953
64	8.9	54.4	56.3	58.0	0.2	2.5	a	9 27.64	53 34 “ “	I B 44.700	18 10 32.80	14 40 39.33	14 4959
65	9.0	16.9	18.6	20.6	22.7	24.8	a	9 50.09	53 34 “ “	I B 47.630	18 10 55.25	14 41 34.90	14 4964
66	9.0	22.1	24.2	26.5	28.6	30.8	c	10 26.45	54 56 10.0 27.2	III 45.950	18 11 31.81	16 6 21 08	16 4791
67	8.9	53.4	55.2	57.1	59.2	1.4	a	12 26.70	54 4 10.0 27.0	I (40).830	18 13 31.95	15 12 37.99	15 4922
68	8.4	56.1	57.9	59.7	1.9	4.1	a	13 29.38	54 4 “ “	I A 40.450	18 14 34.64	15 15 43.48	15 4929
69	7.0	40.1	41.8	43.7	45.8	47.7	a	14 13.26	54 4 “ “	I A 42.910	18 15 18.52	15 16 29.96	15 4938
70	6.8	55.9	57.7	59.7	1.5	3.8	a	15 29.05	53 16 10.0 26.9	I 45.810	18 16 34.22	−14 26 8.82	−14 5013
71	8.6	25.1	26.7	28.5	30.5	32.7	a	15 58.03	53 16 “ “	I 41.285	18 17 3.18	−14 24 42.45	−14 5017
72	8.4	12.0	14.1	16.4	18.6	20.9	c	16 16.41	55 28 10.0 27.5	V 46.540	18 17 21.88	16 38 33.08	16 4850
73	8.4	53.4	55.1	57.1	59.1	1.3	a	18 26.63	54 0 10.0 26.5	I 47.260	18 19 31.89	15 10 37.05	15 4962
74	8.3	15.6	17.4	19.1	21.2	23.5	a	18 48.80	54 0 “ “	III A 42.950	18 19 54.07	15 12 29.76	15 4965
75	9.0	17.1	18.6	20.6	22.6	24.8	a	25 50.14	53 50 10.0 26.6	I 42.530	18 26 55.39	14 59 3.00	15 5005
76	6.0	51.3	53.2	55.5	57.5	59.8	c	25 55.47	53 50 “ “	III B 43.850	18 27 0.72	14 56 17.60	14 5099
77	7.5	46.6	48.6	50.7	53.0	55.1	c	26 50.81	53 50 “ “	III B 41.990	18 27 56.06	14 55 41.73	14 5106
78	8.0	41.3	43.1	45.0	46.9	49.1	a	29 14.37	52 58 10.0 26.2	I 48.020	18 30 19.52	14 8 43.05	14 5129
79	9.0	53.6	55.4	57.5	59.3	1.5	a	29 26.76	52 58 “ “	III A 47.470	18 30 31.92	14 11 47.40	14 5131
80	8.1	16.3	18.1	20.5	22.4	24.8	c	30 20.43	53 54 10.0 25.7	III A 43.360	18 31 25.71	−15 6 31.35	−15 5030
81	8.6	31.7	33.8	35.9	38.0	40.0	c	30 35.89	53 54 “ “	V B 46.010	18 31 41.16	−15 0 57.77	−15 5032
82	9.2	24.4	26.6	28.5	30.3	32.4	e	30 58.95	53 54 “ “	VII B 46.790	18 32 4.22	15 1 13.83	15 5035
83	9.1	19.6	21.8	23.8	25.9	28.1	c	32 23.85	53 20 10.0 24.8	V 45.150	18 33 29.05	14 29 50.77	14 5143
84	8.2	34.5	36.2	38.1	40.1	42.4	a	34 7.61	53 30 10.0 24.4	I B 42.960	18 35 12.83	14 35 52.85	14 5152
85	6.8	22.1	23.9	26.0	27.9	30.1	a	34 55.36	53 30 “ “	I 44.270	18 36 0.59	14 39 29.67	14 5156
86	9.1	2.0	3.8	5.7	7.7	9.9	a	35 35.18	53 30 “ “	I A 38.890	18 36 40.42	14 41 0.18	14 5157
87	8.9	23.5	25.3	27.3	29.3	31.4	a	36 56.82	54 12 10.0 24.2	I 46.870	18 38 2.16	15 22 20.31	15 5076
88	9.6	59.1	1.0	3.0	4.9	7.0	a	38 32.66	55 32 10.0 25.5	I A (41).650	18 39 38.20	16 43 58.43	16 5011
89	9.6	33.5	35.5	37.8	39.7	42.0	c	38 37.71	55 32 “ “	III B (37).810	18 39 43.22	16 36 21.48	16 5013
90	8.0	6.5	8.4	10.1	12.4	14.6	a	40 39.96	55 0 10.0 24.6	III B 41.000	18 41 45.41	−16 5 19.04	−16 5028
91	9.3	47.7	49.9	52.0	56.3	57.9	c_3 d_2	40 47.75	55 0 “ “	VI A 49.570	18 41 53.22	−16 14 29.81	−16 5029
92	8.0	14.0	16.2	18.1	19.9	22.0	e	41 48.50	54 14 10.0 23.9	V 46.750	18 42 53.85	15 24 19.12	15 5099
93	9.3	2.1	4.1	6.5	8.8	10.7	c	43 6.45	54 34 10.0 24.2	V 47.770	18 44 11.86	15 44 39.16	15 5110
94	8.3	......	3.8	5.8	7.8	10.0	a	46 35.24	53 16 10.0 22.6	I 46.440	18 47 40.48	14 26 3.87	14 5215
95	9.4	7.2	9.1	11.0	13.0	15.1	a	47 40.61	54 38 10.0 22.1	I A 46.650	18 48 46.04	15 51 25.64	15 5140
96	5.8	49.5	51.5	53.6	56.1	58.1	c	47 53.77	54 38 “ “	III B 42.420	18 48 59.18	15 43 41.28	15 5143
97	9.0	21.0	23.0	25.3	27.4	29.5	c	48 25.25	54 38 “ “	V A 49.890	18 49 30.68	15 52 30.18	15 5149
98	8.9	42.1	44.0	45.7	47.9	50.0	a	52 15.49	54 46 10.0 22.4	I A 47.690	18 53 20.95	15 59 43.91	16 5103
99	9.0	36.4	38.1	40.0	41.9	44.1	a	53 9.63	54 46 “ “	I B 38.100	18 54 15.07	15 50 15.39	15 5168
100	9.2	9.5	11.6	13.6	15.8	18.0	c	53 13.71	54 46 “ “	III 36.700	18 54 19.15	−15 53 2.79	−15 5169
101	9.3	58.0	59.9	1.6	3.5	5.9	a	55 31.29	54 36 10.0 22.5	I B 41.050	18 56 36.71	−15 41 8.95	−15 5190
102	9.6	17.0	18.8	20.9	22.7	24.7	a	55 50.35	54 36 “ “	III A 45.120	18 56 55.79	15 48 53.51	15 5195
103	9.5	51.8	53.7	55.6	57.7	59.6	a	56 25.21	54 36 “ “	III A 47.080	18 57 30.65	15 49 30.57	15 5201
104	8.0	18.7	20.5	22.5	24.4	26.6	a	58 52.07	54 36 “ “	I A 44.510	18 59 57.51	15 48 38.77	15 5223
105	9.0	10.8	13.1	15.2	17.5	19.7	c	59 15.27	54 36 “ “	V (A) 43.700	19 0 20.71	−15 48 26.40	−15 5225

Reduction Elements. Zone 46.

1894.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
May 9.6....	+0.221	−0.287	−0.296	+0.249	−0.284	−0.276
9.7....	+0.277	−0.281	−0.255			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	24 Scorpii		20 Ophiuchi		24 Ophiuchi		η Ophiuchi		π Sagittarii		d Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	56 22 3.30		49 26 3.00		61 48 3.20		54 26 3.65		60 0 1.10		57 58 2.05	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.285	5 37.73	44.760	5 28.21	46.280	5 57.46	43.610	5 6.60	48.380	6 36.58	45.430	5 40.46
II Red. to Mer......	.245	1.64	.700	1.70	.270	1.57	.570	1.65	.380	1.59		1.59
VI Inclination	.030		.570		.090		.445		.060		.220	0.54
VII Refraction.......	44.990	1 26.0	.520	1 6.9	.060	1 46.6	.385	1 20.0	.110	1 38.9	.195	1 31.2

	υ Sagittarii		κ Aquilae	
	° ′ ″		° ′ ″	
CIRCLE READING.	54 58 1.55		46 6 1.95	
	r	′ ″	r	′ ″
I Microm. Eq......	48.375	6 36.71	45.050	5 33.60
II Red. to Mer......	.335	1.65	.040	1.73
VI Inclination	.140		44.805	
VII Refraction.......	.105	1 21.5	.790	59.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
24 Scorpii...........	16 34 42.10	11	−0.14	+46.77	56 29 8.7	42.8
20 Ophiuchi.........	16 43 13.66	11	−0.15	+46.80	49 32 39.8	42.7
24 Ophiuchi.........	16 49 40.07	11	−0.14	+46.77	61 55 48.8	42.8
ε Ursae Minoris	16 56 10.14	8	+1.46	[+46.89]	316 44	....
η Ophiuchi.........	17 3 33.45	11	−0.14	+46.75	54 32 31.9	43.1
π Sagittarii.........	19 2 42.85	11	−0.14	+46.78	60 8 18.2	41.5
d Sagittarii.........	19 10 41.15	11	−0.14	+46.81	58 5 15.8	41.1
υ Sagittarii.........	19 14 54.45	11	−0.14	+46.87	55 6 1.4	41.2
τ Draconis	19 16 49.59	10	+0.58	[+46.78]	325 46	....
κ Aquilae	19 30 26.21	11	−0.15	+46.86	46 12 36.7	41.3

h 16.798..........	*dt*	s +46.772
	Hourly rate	+ 0.0237
	Adopted Equator Point	° ′ ″ 38 56 42.06

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
16 35	29.945	59.4	58.4
17 35	29.945	59.4	58.7
18 25	29.945	59.3	58.8
18 50	29.965	59.5	59.3
19 30	29.975	59.2	59.9

Note.
Thin clouds toward end of zone.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. S. to 1894.0				
			52°	53°	54°	55°	56°	52°	53°	54°	55°	56°
°	s	h m	s	s	s	s	″	″	″	″	″	″
52	−0.146	16 30	......	+18.070	+18.202	+18.331	+18.463	.....	−14.26	−14.14	−14.03	−13.92
53	0.146	17 0	+18.057	18.190	18.325	18.461	18.597	−13.48	13.33	13.17	13.01	12.86
54	0.146	17 30	18.162	18.298	18.436	18.574	16.714	12.45	12.25	12.06	11.87	11.68
55	0.146	18 0	18.258	18.395	18.532	18.671	18.809	11.29	11.06	10.84	10.61	10.38
56	−0.145	18 30	+18.342	18.477	18.611	18.748	18.885	−10.02	9.77	9.50	9.24	8.98
		19 0	......	+18.542	+18.673	+18.804	+18.937	.....	− 8.39	− 8.10	− 7.81	− 7.53

APPARENT RIGHT ASCENSION.	*R*			
	53°	54°	55°	56°
h m	″	″	″	″
16 30	75.68	78.49	81.41	84.51
17 0	75.67	78.47	81.40	84.49
17 30	75.65	78.45	81.38	84.47
18 0	75.65	78.45	81.38	84.47
18 30	75.63	78.43	81.36	84.45
19 0	75.58	78.38	81.30	84.39

1894 MAY 12. ZONE 47. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.8	28.0	29.8	31.6	33.7	35.9	a	4 1.19	53 40 10.0 26.1	I	45.000	12 5 5.70	−14 51 55.97	14 3468
2	8.7	43.5	45.5	47.4	49.2	51.5	a	6 16.81	53 42 10.0 26.2	I	45.480	12 7 21.33	14 54 5.16	14 3476
3	9.0	3.2	5.1	7.0	9.0	11.1	a	11 36.70	55 22 10.0 26.6	I	43.040	12 12 41.28	16 33 23.21	16 3433
4	9.1	42.6	44.8	47.0	49.3	51.4	c	11 47.03	53 10 10.0 26.8	III A	38.595	12 12 51.56	14 23 7.74	14 3486
5	8.7	33.3	35.6	37.5	39.3	41.3	e	12 7.92	53 50 10.0 26.4	V	45.990	12 13 12.46	15 2 18.49	14 3488
6	9.2	46.8	48.5	50.6	52.5	54.7	a	18 20.02	53 44 10.0 25.5	I	49.080	12 19 24.59	14 57 12.83	14 3509
7	9.2	40.8	42.7	44.6	46.4	48.8	a	19 13.96	53 2 10.0 25.6	I	45.480	12 20 18.52	14 14 2.54	13 3533
8	8.7	35.1	37.3	39.4	41.6	43.8	c	19 39.45	55 28 10.0 27.3	III	49.690	12 20 44.07	16 41 31.81	16 3459
9	8.4	56.2	58.0	0.0	2.0	4.1	a	21 29.87	56 28 10.0 27.5	I	47.600	12 22 34.52	17 40 53.07	17 3628
10	9.0	39.8	41.5	43.5	45.5	47.5	a	22 13.38	56 28 “ “	I A	48.320	12 23 18.03	−17 44 19.99	−17 3632
11	8.5	38.8	41.0	42.9	44.8	46.9	e	22 13.14	55 28 10.0 27.4	V A	49.800	12 23 17.77	−16 44 48.42	−16 3471
12	9.1	3.3	5.7	7.6	9.4	11.5	e	22 37.77	55 28 “ “	VII	49.980	12 23 42.40	16 41 40.26	16 3473
13	9.0	......	58.0	0.0	1.9	3.9	e	23 30.21	55 28 “ “	V B	42.970	12 24 34.85	16 36 12.92	16 3475
14	7.7	58.8	0.7	2.7	4.7	6.8	a	25 32.17	53 58 10.0 25.4	I	44.280	12 26 36.77	15 9 41.54	14 3530
15	9.4	49.0	51.0	53.5	55.7	57.7	c	25 53.39	53 30 10.0 26.4	V	48.700	12 26 57.99	14 43 8.38	14 3532
16	8.5	46.3	48.2	50.0	52.0	54.2	a	27 19.88	56 2 10.0 28.0	I	46.350	12 28 24.55	17 14 27.83	16 3492
17	8.7	24.9	27.0	29.3	31.4	33.6	c	27 29.25	56 2 “ “	III B	42.900	12 28 33.92	17 10 11.66	16 3493
18	9.4	42.1	43.8	45.8	47.7	49.9	a	29 15.34	54 20 10.0 26.2	I	41.725	12 30 19.98	15 30 54.00	15 3501
19	9.1	33.3	35.1	37.1	39.0	41.3	a	30 6.55	53 40 10.0 25.6	I	44.855	12 31 11.17	14 51 51.44	14 3541
20	8.0	23.6	25.4	29.6	31.6	33.8	b_2 c_3	30 33.79	53 54 10.0 25.5	III B	40.740	12 31 38.41	−15 1 23.13	−14 3543
21	8.9	37.6	39.9	42.0	46.1	47.9	c_3 d_2	30 37.72	53 54 “ “	VI A	48.500	12 31 42.35	−15 10 18.42	−14 3544
22	9.0	48.6	50.7	52.9	54.9	57.0	c	31 52.83	53 54 “ “	V B	37.850	12 32 57.46	15 0 29.58	14 3549
23	9.3	59.5	1.6	3.7	5.8	7.9	c	33 3.71	54 24 10.0 26.7	III	45.230	12 34 8.36	15 36 2.63	15 3511
24	8.6	51.5	53.3	55.3	57.3	59.4	a	34 24.85	54 24 “ “	I	44.665	12 35 29.52	15 35 49.92	15 3513
25	8.6	57.8	59.5	1.5	3.5	5.6	a	36 30.97	53 42 10.0 26.3	I	48.300	12 37 35.62	14 54 56.86	14 3561
26	9.0	0.4	2.7	4.8	9.0	10.6	c_3 d_2	37 0.50	54 46 10.0 26.2	VI	44.620	12 38 5.19	15 57 53.75	15 3518
27	9.1	8.6	10.8	12.8	15.0	17.0	c	38 12.85	54 46 “ “	III B	49.760	12 39 17.54	15 56 16.78	15 3523
28	9.1	34.7	36.4	38.4	40.4	42.6	a	40 8.05	54 46 “ “	I	49.970	12 41 12.76	15 59 31.09	15 3530
29	9.0	12.8	14.7	17.1	19.3	21.5	c	40 17.09	54 46 “ “	III	48.490	12 41 21.80	15 59 4.70	15 3531
30	9.5	23.6	25.6	27.5	29.7	31.9	c	41 27.67	55 2 10.0 27.1	III	42.840	12 42 32.39	−16 13 18.23	−15 3534
31	7.0	52.8	54.6	56.6	58.4	0.6	a	43 26.05	54 12 10.0 27.0	I B	43.450	12 44 30.74	−15 20 13.24	−15 3543
32	9.4	55.6	57.6	59.7	2.0	3.9	c	43 59.77	54 12 “ “	III A	45.380	12 45 4.48	15 27 17.04	15 3545
33	8.5	34.5	36.5	38.3	40.1	42.4	a	45 7.74	53 36 10.0 26.0	III	44.130	12 46 12.43	14 47 37.94	14 3592
34	8.9	37.4	39.8	41.6	43.5	45.4	e	45 12.13	53 18 10.0 26.6	V A	43.610	12 46 16.81	14 32 42.17	14 3593
35	7.8	16.8	18.4	20.5	22.4	24.6	a	46 49.87	53 18 “ “	I B	40.920	12 47 54.55	14 25 22.13	14 3596
36	8.1	12.0	14.0	16.3	18.5	20.6	c	47 16.29	55 6 10.0 27.6	III	43.210	12 48 21.05	16 17 25.05	16 3558
37	8.0	12.5	14.3	16.3	18.2	20.5	a	49 45.96	55 8 10.0 26.7	I	48.350	12 50 50.74	16 21 0.40	16 3565
38	9.4	7.5	9.7	11.7	13.9	16.0	c	50 11.77	55 22 10.0 27.0	III A	43.280	12 51 16.56	16 36 39.59	16 3568
39	9.3	53.8	55.7	57.7	59.5	1.6	e	50 27.96	55 22 “ “	VII B	43.440	12 51 32.75	16 30 20.11	16 3570
40	7.9	1.5	3.7	5.8	7.8	9.9	c	52 5.75	55 36 10.0 26.5	V	43.470	12 53 10.56	−16 47 31.91	−16 3574
41	9.3	6.0	7.9	9.8	11.8	14.0	a	53 39.40	54 30 10.0 26.9	I	45.110	12 54 44.16	−15 41 56.58	−15 3572
42	9.2	40.4	42.5	44.6	46.8	49.0	c	53 44.67	54 30 “ “	III	43.020	12 54 49.44	15 41 18.60	15 3574
43	9.0	25.1	27.1	28.9	30.8	33.0	a	54 58.66	55 40 10.0 27.2	III	46.530	12 56 3.49	16 52 28.70	16 3582
44	9.4	35.5	37.5	39.4	41.5	43.5	a	56 8.98	54 32 10.0 26.0	I B	42.280	12 57 13.74	15 39 49.74	15 3583
45	8.6	25.8	27.6	29.4	31.5	33.8	a	56 59.13	54 32 “ “	I	46.940	12 58 3.92	15 44 30.59	15 3588
46	7.9	44.1	46.0	48.0	50.0	52.1	a	57 17.56	54 32 “ “	III A	47.420	12 58 22.36	15 47 54.60	15 3589
47	9.0	29.3	31.1	33.0	35.0	37.1	a	59 2.44	53 22 10.0 25.6	I	45.010	13 0 7.18	14 33 50.26	14 3640
48	9.1	58.5	0.4	2.5	4.2	6.7	a	59 32.32	56 44 10.0 28.0	III	48.180	13 0 37.22	17 57 3.08	17 3769
49	9.2	47.2	49.3	51.3	53.5	55.9	c	59 51.45	56 44 “ “	III A	47.060	13 0 56.35	17 59 54.84	17 3771
50	8.0	51.8	53.7	55.8	57.7	59.9	a	1 25.55	56 16 10.0 27.7	I	45.625	13 2 30.44	−17 28 10.75	−17 3774
51	9.3	31.2	33.0	35.0	37.0	39.2	a	2 4.84	56 16 “ “	I B	37.655	13 3 9.73	−17 22 26.69	−17 3775
52	7.5	45.8	47.7	49.6	51.4	53.7	a	3 19.18	54 46 10.0 26.0	I	48.260	13 4 24.01	15 58 55.44	15 3608
53	8.0	8.0	9.7	11.6	13.6	15.7	a	4 41.36	55 22 10.0 27.3	I	43.340	13 5 46.23	16 33 23.91	16 3612
54	9.1	44.9	46.9	49.0	51.2	53.5	c	4 49.11	55 22 “ “	III A	44.705	13 5 53.98	16 37 4.81	16 3613
55	9.1	38.7	40.5	44.6	46.6	48.8	b_2 c_3	5 48.84	54 8 10.0 26.2	III	44.395	13 6 53.65	15 19 41.67	15 3615
56	8.1	10.8	12.6	14.6	16.6	18.7	a	7 44.21	54 48 10.0 27.0	III	49.890	13 8 49.07	16 1 28.19	15 3621
57	9.3	50.0	52.0	53.8	55.7	57.9	a	8 23.43	54 48 “ “	I	44.020	13 9 28.29	15 59 34.54	15 3622
58	8.9	50.9	52.6	54.5	56.4	58.6	a	9 24.11	54 32 10.0 26.7	I	47.790	13 10 28.96	15 44 45.23	15 3628
59	9.3	8.6	10.5	12.4	14.3	16.5	a	10 41.89	54 0 10.0 26.2	I	42.850	13 11 46.71	15 11 9.30	14 3679
60	9.3	9.0	10.8	12.8	14.7	17.1	a	11 42.71	56 36 10.0 27.5	I	44.220	13 12 47.68	−17 47 43.28	−17 3811
61	4.0	32.0	33.9	35.8	37.8	40.1	a	12 5.74	56 36 “ “	I B	46.420	13 13 10.71	−17 45 12.87	−17 3813
62	9.4	33.3	35.1	37.2	39.1	41.4	a	13 7.09	56 46 10.0 27.5	III A	42.150	13 14 12.08	18 0 19.13	17 3819
63	9.3	9.8	11.7	13.7	16.0	18.4	c	13 13.93	56 46 “ “	III A	40.950	13 14 18.92	17 59 56.28	17 3820
64	8.1	5.5	7.5	9.7	11.8	14.0	c	14 9.71	56 46 “ “	III B	42.210	13 15 14.70	17 53 54.67	17 3826
65	9.1	3.9	5.6	7.6	9.6	11.8	a	15 37.47	56 16 10.0 28.0	I B	43.650	13 16 42.44	17 24 18.76	17 3831
66	9.3	13.3	15.5	17.6	19.8	22.0	c	16 17.65	56 16 “ “	III A	49.240	13 17 22.63	17 32 32.28	17 3834
67	9.0	44.1	45.9	47.9	49.8	52.0	a	16 17.72	56 16 “ “	I A	42.610	13 17 22.70	17 30 24.35	17 3833
68	9.1	19.4	21.2	23.1	25.1	27.4	a	17 53.08	56 40 10.0 28.6	III	45.330	13 18 58.09	17 52 5.97	17 3843
69	9.3	20.0	21.8	23.7	25.7	28.0	a	18 53.40	54 54 10.0 26.7	III	43.550	13 19 58.32	16 5 25.71	15 3661
70	9.6	35.4	37.6	39.7	41.5	43.5	e	19 9.91	54 54 “ “	VII B	49.010	13 20 14.83	−16 4 0.18	−15 3662

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
71	8.8	18.4	20.7	22.6	24.4	26.6	e	19 52.90	54 54 10.0 26.7	V A	45.680	13 20 57.83	−16 9 20.70	−15 3664
72	9.3	27.7	29.8	32.0	34.3	36.3	c	21 32.03	56 34 10.0 27.5	III	48.400	13 22 37.06	17 47 2.90	17 3853
73	9.3	16.2	18.0	20.2	22.5	24.6	c	22 20.31	56 34 " "	III B	41.110	13 23 25.34	17 41 31.61	17 3857
74	8.9	52.7	54.5	56.4	58.5	0.7	a	23 25.91	53 22 10.0 25.7	III	46.300	13 24 30.76	14 34 12.53	14 3727
75	8.5	10.6	12.7	14.8	16.9	19.2	c	24 14.85	54 34 10.0 25.7	III B	44.025	13 25 19.78	15 42 19.98	15 3680
76	8.6	34.9	37.0	39.1	41.3	43.5	c	24 39.17	54 34 " "	V A	48.500	13 25 44.11	15 50 12.03	15 3682
77	9.0	38.8	41.1	43.2	45.3	47.5	c	27 43.19	54 40 10.0 25.5	III	46.980	13 28 48.15	15 52 28.04	15 3694
78	9.1	8.4	10.3	12.6	14.9	17.0	c	28 12.65	54 40 " "	III B	44.870	13 29 17.60	15 48 35.46	15 3695
79	9.2	37.2	39.2	41.5	43.5	45.7	c	29 41.43	53 32 10.0 26.5	V	46.640	13 30 46.32	14 44 20.22	14 3752
80	9.0	14.0	16.0	18.2	20.4	22.7	c	30 18.27	53 32 " "	III	40.900	13 31 23.16	−14 42 29.20	−14 3755
81	8.8	57.7	59.6	1.3	3.2	5.5	a	31 30.84	53 32 " "	I A	47.270	13 32 35.74	−14 47 41.60	−14 3760
82	7.7	20.0	21.9	23.7	25.6	27.8	a	32 53.16	53 32 " "	I B	49.645	13 33 58.06	14 42 1.08	14 3767
83	9.0	10.1	11.8	13.7	15.7	18.0	a	33 43.55	55 46 10.0 27.3	I	47.250	13 34 48.61	16 58 34.19	16 3717
84	9.0	46.3	48.0	50.1	52.0	54.2	a	34 19.58	54 12 10.0 26.6	III	47.060	13 35 24.54	15 24 27.47	15 3718
85	9.0	0.8	2.7	4.5	6.6	8.7	a	35 34.12	54 12 " "	I	49.650	13 36 39.08	15 25 14.69	15 3723
86	8.9	27.5	29.3	31.4	33.3	35.5	a	37 1.02	55 20 10.0 26.4	I	46.720	13 38 6.07	16 32 21.70	16 3732
87	9.0	14.6	16.6	18.9	21.0	23.1	c	37 18.85	54 16 10.0 26.5	III	48.060	13 38 23.82	15 28 45.99	15 3728
88	8.9	9.9	11.6	13.5	15.5	17.6	a	38 43.08	54 16 " "	I B	47.380	13 39 48.06	15 25 18.66	15 3734
89	7.0	2.6	4.8	7.0	9.0	11.3	c	39 6.95	54 4 10.0 25.3	III	45.420	13 40 11.92	15 15 54.20	15 3735
90	9.1	57.4	59.1	1.1	3.2	5.4	a	40 30.99	56 8 10.0 27.5	I	43.710	13 41 36.11	−17 19 26.57	−17 3930
91	6.5	20.0	21.9	24.0	26.0	28.0	a	40 53.74	56 8 " "	I A	40.260	13 41 58.86	−17 21 34.03	−17 3932
92	9.4	51.2	53.1	55.2	57.0	59.3	a	42 24.85	55 46 10.0 27.5	I	45.910	13 43 29.96	16 58 6.92	16 3748
93	6.0	47.3	49.1	51.3	53.2	55.4	a	43 21.06	56 26 10.0 28.2	I	45.955	13 44 26.22	17 38 9.95	17 3937
94	9.3	27.4	29.2	31.2	33.2	35.3	a	45 1.10	56 40 10.0 27.8	I	44.520	13 46 6.28	17 51 42.75	17 3944
95	8.0	32.3	34.1	36.0	37.9	40.1	a	46 5.98	57 0 10.0 27.8	I	48.230	13 47 11.20	18 12 54.20	17 3949
96	9.3	42.4	44.2	46.4	48.4	50.5	a	46 16.28	57 0 " "	III	41.440	13 47 21.49	18 10 46.74	17 3950
97	9.1	59.9	1.8	3.7	5.6	7.8	a	47 33.32	54 54 10.0 26.6	I	44.545	13 48 38.40	16 5 36.75	15 3764
98	9.2	0.4	2.2	4.1	6.0	8.3	a	48 33.75	54 54 " "	I B	43.810	13 49 38.83	16 2 10.29	15 3768
99	9.0	46.4	48.2	50.0	52.1	54.3	a	49 19.79	55 6 10.0 27.6	III	47.370	13 50 24.89	16 18 33.01	16 3763
100	9.4	7.3	9.3	11.2	13.3	15.3	a	50 41.14	56 46 10.0 27.5	I	43.730	13 51 46.37	−17 57 26.56	−17 3966
101	9.4	57.2	59.1	1.1	3.2	5.5	a	51 31.12	56 58 10.0 28.2	I A	44.920	13 52 36.37	−18 13 3.23	−18 3706
102	9.3	36.6	38.6	40.8	42.9	45.1	c	51 40.81	56 58 " "	III B	48.390	13 52 46.06	18 7 45.52	17 3969
103	7.5	55.2	57.1	59.1	1.3	3.3	a	52 29.09	56 58 " "	III B	49.750	13 53 34.34	18 8 11.21	17 3971
104	8.9	26.0	27.8	30.0	31.8	34.0	a	53 59.82	56 58 " "	I	49.950	13 55 5.09	18 11 25.16	17 3978
105	8.9	9.7	11.1	15.3	17.5	19.7	b_2 c_3	54 19.67	54 38 10.0 27.0	III	47.055	13 55 24.77	15 50 24.16	15 3785
106	9.3	22.3	24.0	26.0	28.0	30.2	a	55 55.84	55 58 10.0 26.8	I A	51.250	13 57 1.05	17 14 58.86	17 3984
107	9.0	2.0	3.9	5.8	7.7	10.0	a	56 35.60	55 58 " "	I B	47.730	13 57 40.80	17 7 26.17	16 3786
108	9.1	29.8	31.2	35.4	37.7	39.8	b_2 c_3	56 39.82	55 58 " '	III B	41.000	13 57 45.02	17 5 19.81	16 3787
109	9.0	8.6	11.0	12.8	14.6	16.6	e	56 42.91	55 58 " "	VII A	50.250	13 57 48.12	17 14 44.15	17 3987
110	7.8	10.4	12.2	14.2	16.1	18.3	a	58 43.56	53 10 10.0 26.2	I	48.050	13 59 48.56	−14 22 35.75	−14 3867
111	9.0	17.5	19.1	21.2	23.1	25.3	a	0 51.15	57 10 10.0 28.0	I B	42.050	14 1 56.47	−18 17 41.32	−18 3751
112	9.3	36.6	38.4	40.4	42.5	44.6	a	1 10.43	57 10 " "	III A	47.260	14 2 15.76	18 25 47.65	18 3752
113	9.2	36.9	39.0	41.0	43.3	45.4	c	1 41.13	57 10 " "	III	49.950	14 2 46.46	18 23 25.60	18 3754
114	8.9	41.8	44.1	46.0	47.8	49.8	e	2 16.09	56 4 10.0 27.0	VII	44.500	14 3 21.34	17 15 40.78	17 4013
115	9.0	24.9	26.6	28.6	30.6	32.8	a	3 58.48	56 20 10.0 27.0	III	42.745	14 5 3.76	17 31 4.68	17 4022
116	8.9	14.8	16.7	18.9	21.1	23.3	c	4 18.97	55 58 10.0 26.0	V	45.860	14 5 24.22	17 10 3.91	16 3821
117	8.9	30.0	32.0	34.2	36.1	38.4	c	11 34.15	53 14 10.0 24.8	V	49.070	14 12 39.21	14 26 54.56	14 3918
118	9.6	34.0	36.0	38.0	42.5	44.0	c_3 d_2	12 33.92	54 6 10.0 25.5	VI	43.290	14 13 39.06	15 17 7.73	15 3846
119	8.7	41.7	43.2	47.5	49.6	51.9	b_2 c_3	13 51.82	55 52 10.0 26.7	V	46.180	14 14 57.12	17 4 7.40	16 3843
120	9.0	13.5	15.6	17.7	19.9	22.1	c	14 17.77	55 52 " "	V B	47.250	14 15 23.07	−17 1 15.25	−16 3844
121	8.9	23.7	26.0	28.0	29.9	31.7	e	17 58.47	53 8 10.0 25.8	VII	46.760	14 19 3.55	−14 20 10.46	−14 3948
122	8.8	17.7	19.8	22.0	24.1	26.3	c	19 21.99	54 38 10.0 27.6	V	48.780	14 20 27.22	15 50 52.09	15 3869
123	9.2	20.2	22.1	24.4	26.5	28.9	c	20 24.43	56 44 10.0 27.4	III	45.940	14 21 29.84	17 56 2.38	17 4090
124	9.3	42.6	44.5	46.7	48.9	51.0	c	20 46.75	56 44 " "	V	49.340	14 21 52.17	17 57 8.63	17 4092
125	9.3	55.2	56.7	1.2	3.1	5.3	b_2 c_3	22 5.33	55 24 10.0 26.8	III B	40.360	14 23 10.63	16 30 58.91	16 3873
126	9.1	35.1	37.3	39.2	41.1	43.0	e	22 9.42	55 24 " "	V A	41.160	14 23 14.73	16 37 41.07	16 3875
127	9.0	7.4	9.7	11.5	13.4	15.5	e	22 41.77	55 24 " "	VII A	48.630	14 23 47.09	16 40 4.41	16 3878
128	9.2	7.0	9.0	11.3	13.5	15.6	c	24 11.29	54 42 10.0 26.5	III	53.120	14 25 16.55	15 56 11.27	15 3882
129	9.4	59.4	1.5	3.8	6.0	8.1	c	25 3.77	54 42 " "	III B	37.020	14 26 9.02	15 47 52.22	15 3887
130	7.8	21.3	23.3	25.6	29.8	31.5	c_3 d_2	25 21.31	54 42 " "	V A	39.620	14 26 26.58	−15 55 8.56	−15 3892
131	8.9	9.7	11.9	14.0	16.2	18.4	c	26 14.05	54 42 " "	III	42.540	14 27 19.32	−15 52 49.25	−15 3893
132	9.2	12.4	14.6	16.8	18.9	21.0	c	27 16.75	54 4 10.0 24.8	III	44.570	14 28 21.96	15 15 24.94	15 3898
133	9.5	47.5	49.7	51.8	54.0	56.1	c	27 51.83	53 10 10.0 26.4	V	45.410	14 28 56.96	14 21 40.69	14 3983
134	9.0	4.8	6.9	9.1	11.3	13.6	c	29 9.15	56 24 10.0 27.3	III	45.760	14 30 14.59	17 35 55.21	17 4122
135	9.3	33.8	35.6	37.7	39.6	41.8	a	31 7.46	56 12 10.0 27.8	I	42.110	14 32 12.89	17 22 42.90	17 4128
136	9.0	16.2	18.2	20.1	22.0	24.3	a	31 49.93	56 12 " "	I A	43.940	14 32 55.37	17 26 30.75	17 4133
137	9.3	1.6	3.5	5.4	7.4	9.4	a	32 35.21	56 12 " "	I B	37.295	14 33 40.64	17 17 58.49	17 4136
138	8.8	39.6	41.6	43.9	46.0	48.1	c	32 43.85	56 12 " "	III A	46.340	14 33 49.29	17 27 17.86	17 4138
139	9.3	19.5	21.2	23.2	......	27.4	a	33 53.05	56 12 " "	I B	47.740	14 34 58.49	17 21 16.91	17 4144
140	9.0	34.4	36.5	38.8	40.9	43.0	c	38 38.73	56 22 10.0 27.3	III	48.340	14 39 44.22	−17 34 41.17	−17 4169
141	9.0	11.2	13.3	15.6	17.7	19.9	c	39 15.55	53 26 10.0 25.0	V B	44.580	14 40 20.75	−14 34 8.87	−14 4022
142	9.2	54.8	56.8	59.0	1.2	3.3	c	39 59.03	53 26 " "	III A	40.130	14 41 4.24	14 39 7.79	14 4027
143	9.5	22.9	24.5	26.6	28.4	30.7	a	41 56.26	55 24 10.0 27.0	I	47.580	14 43 1.68	16 36 20.68	16 3940
144	9.4	46.1	48.0	49.9	51.9	54.1	a	42 19.63	55 24 " "	I	44.470	14 43 25.05	−16 35 21.35	−16 3942

Reduction Elements. Zone 47.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
May 12.3....	+0.260	—0.380	—0.288	+0.273	—0.342	—0.228
12.5....	+0.286	—0.305	—0.169			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ζ Crateris		η Crateris		γ Corvi		Piazzi XII. 54		κ Virginis		2 Librae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	56 36 3.90		55 24 3.65		55 46 3.25		51 48 3.25		48 36 3.40		50 4 2.85	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.730	5 8.66	43.830	5 9.77	48.690	6 43.04	47.515	6 20.32	48.210*	6 38.81	45.100	5 34.54
II Red. to Mer......	.710	1.63	.750	1.65	.645	1.64	.465	1.68	.400	1.72	.045	1.70
VI Inclination	.535		.570		.510		.270		.440	—0.81	44.895	
VII Refraction.......	.465	1 25.9	.520	1 22.2	.445	1 23.5	.260	1 12.3		1 5.0	.845	1 8.4

	μ Virginis		α Librae	
	° ′ ″		° ′ ″	
CIRCLE READING.	44 2 3.55		54 26 3.15	
	r	′ ″	r	′ ″
I Microm. Eq......	45.850	5 48.87	45.300	5 39.10
II Red. to Mer......	.815	1.75	.280	1.65
VI Inclination	.610		.150	
VII Refraction.......	.620	55.4	.110	1 20.0

* Readings probably recorded in wrong order.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ζ Crateris...........	11 38 37.12	11	—0.11	+47.75	56 42 40.1	44.0
η Crateris...........	11 49 50.63	11	—0.11	+47.73	55 30 37.3	43.7
4 H. Draconis.......	12 6 32.76	7	+0.75	[+47.96]	320 44	...
γ Corvi.............	12 9 35.23	11	—0.11	+47.70	55 54 11.4	43.9
Piazzi XII. 54	12 14 41.34	11	—0.12	+47.71	51 55 37.5	43.2
κ Virginis	14 6 28.86	11	—0.13	+47.77	48 43 48.1	43.8
4 Ursae Minoris.....	14 8 35.68	9	+0.73	[+47.51]	320 54	...
2 Librae...........	14 16 57.84	11	—0.12	+47.75	50 10 47.5	44.3
μ Virginis	14 36 42.98	11	—0.13	+47.69	44 8 49.6	44.1
α Librae...........	14 44 15.39	11	—0.12	+47.72	54 33 3.9	43.4

h 11.968	*dt*......................	s +47.722
	Hourly rate	+ 0.0041
	Adopted Equator Point..........	° ′ ″ 38 56 43.80

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
11 38	30.085	66.8	65.4
12 17	30.085	65.2	63.8
13 7	30.085	63.8	62.2
14 11	30.075	62.2	60.4
14 44	30.065	61.9	60.2

Note.

144. Close double; equal components. (Mean evidently observed.)

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
52	—0.120	12 0	+16.882	+16.890	+16.899	+16.905	+16.913	—14.74	—14.99	—15.24	—15.48	—15.73
53	0.118	12 30	16.993	17.018	17.044	17.070	17.094	15.46	15.68	15.90	16.10	16.33
54	0.116	13 0	17.111	17.154	17.197	17.240	17.283	16.00	16.18	16.37	16.56	16.74
55	0.114	13 30	17.238	17.297	17.357	17.416	17.477	16.34	16.49	16.66	16.80	16.95
56	0.112	14 0	17.368	17.443	17.519	17.594	17.670	16.50	16.61	16.73	16.84	16.96
57	—0.110	14 30	17.501	17.590	17.680	17.769	17.861	16.44	16.52	16.59	16.67	16.73
		15 0	+17.635	+17.737	+17.838	+17.941	+18.046	—16.19	—16.23	—16.26	—16.28	—16.32

APPARENT RIGHT ASCENSION.	*R*				
	53°	54°	55°	56°	57°
h m	″	″	″	″	″
12 0	75.11	77.89	80.80	83.87	87.08
12 30	75.27	78.05	80.97	84.04	87.26
13 0	75.41	78.20	81.12	84.20	87.42
13 30	75.53	78.32	81.25	84.33	87.56
14 0	75.67	78.47	81.40	84.49	87.72
14 30	75.70	78.51	81.43	84.53	87.76
15 0	75.70	78.51	81.43	84.53	87.76

1894 MAY 17. ZONE 48. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.7	3.8	5.7	7.8	9.8	11.9	a	11 37.40	55 8 10.0 26.8	I A	46.790	12 12 44.70	−16 23 45.49	−16 3434
2	9.2	37.5	39.5	41.7	44.0	46.1	c	11 41.77	55 8 " "	III B	44.230	12 12 49.07	16 16 33.05	16 3435
3	8.5	57.5	59.4	1.3	3.1	5.4	a	21 31.03	55 42 10.0 27.5	I	49.820	12 22 38.38	16 55 31.24	16 3466
4	9.0	14.2	16.1	18.0	20.0	22.1	a	21 47.76	55 42 " "	III B	47.460	12 22 55.11	16 51 35.82	16 3467
5	7.8	15.6	17.5	19.7	22.0	24.0	c	22 19.77	54 16 10.0 27.0	V	42.260	12 23 27.08	15 27 6.68	15 3475
6	8.9	47.6	49.9	51.8	54.1	56.4	c	23 51.97	56 12 10.0 28.5	III	42.700	12 24 59.33	17 23 19.29	17 3636
7	8.9	2.2	4.0	6.0	7.9	10.1	a	25 35.72	55 42 10.0 26.7	I	44.990	12 26 43.08	16 53 58.59	16 3483
8	8.3	37.9	39.6	41.5	43.6	45.9	a	26 11.60	56 58 10.0 28.5	III	49.330	12 27 18.99	18 11 27.52	17 3644
9	8.9	29.1	31.3	33.6	35.7	38.0	c	26 33.55	56 44 10.0 28.0	V	44.700	12 27 40.93	17 56 0.07	17 3647
10	8.9	11.2	12.9	14.9	16.7	19.0	a	27 44.22	52 52 10.0 26.1	III	49.020	12 28 51.51	−14 5 9.39	−13 3557
11	8.0	13.3	15.3	17.4	19.5	21.6	c	28 17.43	54 36 10.0 26.6	III	45.730	12 29 24.76	−15 48 11.31	−15 3498
12	9.0	45.1	46.8	48.7	50.7	53.0	a	29 18.41	54 46 10.0 26.8	III	50.200	12 30 25.76	15 59 36.84	15 3502
13	9.1	48.0	50.0	52.2	54.3	56.5	c	29 52.21	55 36 10.0 26.5	III B	40.920	12 30 59.58	16 43 29.94	16 3500
14	9.3	2.6	4.9	9.1	10.9	13.5	c_4 d_3	30 0.61	55 36 " "	VII A	43.840	12 31 7.99	16 50 53.76	16 3501
15	9.3	10.9	12.8	15.0	17.2	19.4	c	31 15.07	55 36 " "	V B	38.640	12 32 22.45	16 42 47.93	16 3503
16	7.0	19.5	21.7	23.8	26.0	28.1	c	32 23.83	56 28 10.0 28.1	III A	41.130	12 33 31.23	17 42 2.37	17 3668
17	9.0	31.9	34.0	36.1	38.3	40.5	c	32 36.17	56 28 " "	VI B	43.630	12 33 43.57	17 36 26.78	17 3669
18	8.5	28.6	30.7	32.8	35.0	37.2	c	33 32.87	56 28 " "	III B	48.845	12 34 40.28	17 38 3.70	17 3679
19	9.1	51.0	53.0	54.9	56.8	59.0	a	36 24.64	55 50 10.0 27.7	I	45.460	12 37 32.04	17 2 7.50	16 3522
20	9.4	43.2	45.0	47.0	49.1	51.2	a	37 16.67	55 0 10.0 27.5	I	45.460	12 38 24.06	−16 12 5.03	−15 3521
21	8.0	33.1	34.9	36.9	39.0	41.0	a	38 6.84	56 44 10.0 27.7	I	48.540	12 39 14.28	−17 57 8.52	−17 3696
22	9.6	30.8	32.8	35.0	37.2	39.6	c	38 35.09	56 44 " "	III B	46.230	12 39 42.53	17 53 14.02	17 3699
23	8.0	35.4	37.4	39.4	41.2	43.4	a	40 8.75	53 42 10.0 26.5	I	44.240	12 41 16.09	14 53 37.67	14 3573
24	9.0	55.0	56.9	59.3	1.4	3.6	c	42 59.25	53 6 9.5 25.5	III	44.575	12 44 6.58	14 17 43.31	14 3585
25	8.9	6.0	7.7	9.8	11.8	14.0	a	44 39.53	55 34 10.0 26.1	I	49.530	12 45 46.96	16 47 22.56	16 3546
26	9.5	58.9	0.8	3.0	5.2	7.4	c	45 3.07	55 52 10.0 27.3	V	46.190	12 46 10.51	17 4 23.82	16 3549
27	9.5	27.9	29.5	31.3	33.3	35.6	a	46 1.23	55 52 " "	III	46.700	12 47 8.68	17 4 31.80	16 3554
28	9.6	21.1	23.3	25.5	27.7	29.8	c	46 25.49	55 52 " "	III B	45.575	12 47 32.94	17 0 58.00	16 3555
29	9.2	38.5	40.1	42.3	44.1	46.5	a	51 11.98	55 38 10.0 27.2	I	48.840	12 52 19.43	16 51 9.37	16 3572
30	......	59.0	0.8	2.8	4.7	7.0	a	56 32.46	55 8 10.0 26.6	I	47.310	12 57 39.92	−16 20 37.86	−16 3588

Reduction Elements. Zone 48.

1894.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
May 17.3....	+0.200	−0.330	−0.249	+0.222	−0.356	−0.249
17.4....	+0.244	−0.383				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ζ Crateris		Lalande 22585		ε Corvi		γ Corvi		Piazzi XII. 54		Mayer 522	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	56 36 4.45		48 40 3.35		60 52 3.40		55 46 3.60		51 48 3.55		44 34 3.35	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......		5 9.17	47.490	6 20.21	43.590	5 5.79	48.755	6 44.06	47.550	6 21.17	44.025	5 14.75
II Red. to Mer......	43.725	1.65	.430	1.70	.545	1.58	.720	1.64	.520	1.68	.020	1.74
VI Inclination......	.620	0.82	.290		.360		.530		.330		43.865	
VII Refraction.......	.565	1 23.2	.280	1 2.5	340	1 38.4	.500	1 20.8	.290	1 10.0	.810	54.3

	ψ Virginis		Lalande 24277	
	° ′ ″		° ′ ″	
CIRCLE READING.	47 48 3.50		58 50 3.85	
	r	′ ″	r	′ ″
I Microm. Eq......	45.275	5 38.64	47.120	6 13.98
II Red. to Mer......	.255	1.71	.145	1.60
VI Inclination......	.120		46.970	
VII Refraction.......	.095	1 0.8	.940	1 31.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ζ Crateris	11 38 34. 40	11	−0. 19	+50. 51	56 42 39. 3	43. 1
Lalande 22585	11 54 29. 21	11	−0. 20	+50. 52	48 47 27. 8	43. 4
ε Corvi	12 3 51. 46	11	−0. 18	+50. 53	60 58 49. 2	43. 6
4 H. Draconis	12 6 30. 11	11	+0. 51	[+50. 46]	320 44	....
γ Corvi	12 9 32. 56	11	−0. 19	+50. 39	55 54 10. 1	42. 7
Piazzi XII. 54	12 14 38. 73	11	−0. 20	+50. 35	51 55 36. 4	42. 2
Mayer 522	12 41 16. 19	11	−0. 21	+50. 49	44 40 14. 1	42. 9
ψ Virginis	12 48 1. 96	11	−0. 20	+50. 40	47 54 44. 6	42. 7
Lalande 24277	12 57 16. 94	11	−0. 19	+50. 50	58 57 50. 5	42. 9

h
11. 942 .... *dt* .... s +50. 488
Hourly rate .... −0. 0728

Adopted Equator Point .... 38° 56′ 42″. 94

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
11 47	29. 535	72. 2	72. 0
12 35	29. 535	70. 2	71. 0
13 24	29. 525	69. 8	69. 1

Note.
29. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0. 198	12 0	+16. 933	+16. 941	+16. 949	+16. 957	+16. 965	+16. 973
53	0. 197	12 30	+17. 015	17. 042	17. 066	17. 093	17. 118	17. 143
54	0. 196	13 0	......	+17. 150	+17. 192	+17. 234	+17. 277	+17. 320
55	0. 194							
56	0. 192							
57	−0. 190							

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894.0						*R*				
	52°	53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″
12 0	−14. 35	−14. 62	−14. 89	−15. 16	−15. 42	−15. 69	72. 69	75. 39	78. 20	81. 17	84. 28
12 30	−15. 12	15. 37	15. 61	15. 86	16. 10	16. 33	72. 79	75. 49	78. 31	81. 28	84. 39
13 0	.....	−15. 93	−16. 14	−16. 35	−16. 56	−16. 78	72. 93	75. 63	78. 45	81. 43	84. 55

1894 MAY 25. ZONE 49. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8. 7	13. 1	14. 9	16. 6	18. 6	20. 8	a	21 46. 21	53 58 10. 0 27. 5	I B	41. 710	12 22 54. 71	−15 5 42. 42	−14 3521
2	9. 0	41. 6	43. 2	45. 1	47. 1	49. 3	a	22 14. 69	53 58 " "	III A	43. 765	12 23 23. 20	15 12 48. 63	14 3524
3	......	0. 6	2. 7	4. 8	7. 0	9. 2	c	24 4. 87	53 34 10. 0 27. 0	III	45. 530	12 25 13. 37	14 46 7. 75	14 3529
4	6. 0	13. 4	15. 1	17. 0	19. 0	21. 2	a	25 46. 63	54 26 10. 0 27. 5	I	46. 720	12 26 55. 16	15 38 30. 87	15 3489
5	8. 0	44. 7	46. 4	48. 2	50. 3	52. 4	a	29 18. 03	55 24 10. 0 27. 6	I	44. 620	12 30 26. 59	16 35 53. 24	16 3498
6	......	46. 8	48. 7	50. 6	52. 7	54. 9	a	31 20. 05	53 6 10. 0 27. 1	I	45. 940	12 32 28. 55	14 18 12. 03	14 3548
7	9. 0	35. 3	37. 0	39. 0	41. 0	43. 3	a	42 8. 55	53 58 10. 0 26. 6	I	46. 830	12 43 17. 10	15 10 29. 70	14 3581
8	9. 2	14. 1	16. 0	18. 1	20. 1	22. 4	a	46 47. 69	54 50 10. 0 28. 2	I	48. 010	12 47 56. 30	16 2 54. 63	15 3551
9	7. 8	36. 1	38. 4	40. 5	42. 6	44. 7	c	51 40. 47	53 12 10. 0 26. 7	V A	43. 550	12 52 49. 01	14 26 40. 62	14 3615
10	9. 3	47. 8	49. 7	51. 9	54. 0	56. 1	c	54 51. 91	54 2 10. 0 28. 4	V	49. 060	12 56 0. 49	−15 15 15. 03	−15 3578
11	......	19. 5	21. 2	23. 2	25. 4	......	a	57 52. 99	55 32 10. 0 29. 0	I B	49. 100	[12 59 1. 64]	−16 42 3. 97	−16 3592

Reduction Elements. Zone 49.

1894.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
May 25.3	+0. 023	−0. 268	−0. 166	+0. 042	−0. 236	−0. 166
25.4	+0. 061	−0. 203				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

CIRCLE READING.	Lalande 22585		ε Corvi		γ Corvi		Piazzi XII. 54		89 Virginis	
	° ′ ″ 48 40 4.20		° ′ ″ 60 52 4.00		° ′ ″ 55 46 4.10		° ′ ″ 51 48 4.05		° ′ ″ 56 26 4.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	47.320	6 16.77	43.350	5 1.58	48.590	6 41.19	47.440	6 19.02	45.860	5 50.83
II Red. to Mer.	.280	1.70	.300	1.58	.520	1.64	.380	1.68	.910	1.65
VI Inclination	.110		.150		.400		.220	.	.710	−0.81
VII Refraction	.060	1 3.8	.150	1 40.4	.390	1 22.4	.195	1 11.3		1 24.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 22585	11 54 27.95	11	−0.24	+51.77	48 47 26.5	42.2
ε Corvi	12 3 50.32	11	−0.24	+51.66	60 58 47.6	41.8
4 H. Draconis	12 6 28.89	11	−0.17	[+51.70]	320 44	....
γ Corvi	12 9 31.27	11	−0.24	+51.69	55 54 9.3	41.7
Piazzi XII. 54	12 14 37.39	11	−0.24	+51.69	51 55 36.1	41.9
89 Virginis	13 43 17.38	11	−0.24	+51.54	56 33 20.7	41.9

h 12.500 .... *dt* .... s +51.662
Hourly rate .... − 0.1007

Adopted Equator Point .... ° ′ ″ 38 56 41.90

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
11 51	29.665	65.1	64.2
12 42	29.575	63.3	62.4
13 47	29.595	63.0	62.4

Note.
3, 6, 11, 89 Virginis. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	A = α to 1900.0				D = Z. D. S. to 1894.0				R		
			53°	54°	55°	56°	53°	54°	55°	56°	53°	54°	55°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
53	−0.240	12 0	+16.987	+16.995	+17.005	......	−14.69	−14.98	−15.28	.....	74.11	76.86	79.73
54	0.239	12 30	17.073	17.097	17.125	+17.151	15.47	15.75	16.03	−16.30	74.15	76.90	79.76
55	0.238	13 0	+17.164	+17.206	+17.250	+17.293	−16.06	−16.31	−16.56	−16.81	74.17	76.91	79.78
56	−0.238												

1894 MAY 28. ZONE 50. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.4	47.9	49.7	51.5	53.8	55.7	a	24 21.33	55 12 10.0 26.9	III	45.725	12 25 30.94	−16 24 15.49	−16 3477
2	9.6	59.0	1.0	3.3	5.4	7.5	c	30 3.25	56 46 10.0 27.0	V	46.220	12 31 12.93	17 58 30.66	17 3660
3	8.9	36.4	38.7	40.8	42.6	44.5	e	30 11.00	54 38 10.0 26.8	VII	45.050	12 31 20.62	15 50 3.67	15 3504
4	8.7	41.2	43.0	44.9	47.0	49.0	a	32 14.88	56 46 10.0 27.0	III	48.345	12 33 24.57	17 59 9.30	17 3667
5	8.9	19.8	21.8	23.7	25.7	27.9	a	32 53.56	56 18 10.0 27.5	III	44.540	12 34 3.24	17 29 55.66	17 3672
6	8.8	8.5	10.3	12.0	14.3	16.5	a	33 42.18	56 46 10.0 27.3	III	47.925	12 34 51.87	17 59 1.33	17 3680
7	8.6	9.4	11.6	13.6	15.9	18.0	c	34 13.71	56 16 10.0 27.5	III	44.915	12 35 23.39	17 28 2.59	17 3682
8	9.1	19.8	21.7	23.6	25.7	27.8	a	36 53.03	53 6 10.0 26.4	I	45.930	12 38 2.63	14 18 10.74	14 3563
9	8.5	5.2	7.0	9.0	10.9	13.0	a	38 38.49	54 18 10.0 26.3	I	44.530	12 39 48.13	15 29 46.92	15 3525
10	8.9	6.2	8.0	10.0	12.0	14.2	a	41 39.75	55 38 10.0 26.6	I	43.265	12 42 49.45	−16 49 26.32	−16 3534
11	9.4	0.3	1.9	3.7	5.6	8.0	a	42 33.31	53 54 10.0 26.6	III	44.370	12 43 42.95	−15 5 44.36	−14 3583
12	8.9	49.0	51.0	53.3	57.5	59.0	c_3 d_2	42 48.97	54 26 10.0 26.4	VI	47.950	12 43 58.63	15 38 56.15	15 3540
13	8.7	32.2	34.4	36.6	38.7	41.0	c	44 36.59	56 6 10.0 26.6	III	47.760	12 45 46.32	17 18 54.72	17 3718
14	8.9	9.2	11.1	13.2	15.0	17.2	a	45 42.88	56 6 " "	I B	47.600	12 46 52.61	17 15 37.45	17 3721
15	......	53.4	55.5	57.7	0.0	2.0	c	45 57.73	56 28 10.0 27.4	III	42.610	12 47 7.47	17 39 18.01	17 3722
16	9.4	27.0	28.9	30.7	32.7	34.9	a	49 0.53	55 46 10.0 27.1	I	45.720	12 50 10.27	16 58 12.80	16 3563
17	6.5	54.9	56.7	58.7	0.6	2.9	a	49 28.14	53 34 10.0 26.5	III	48.790	12 50 37.79	14 47 6.77	14 3605
18	8.0	51.5	53.0	57.3	59.3	1.4	b_2 c_3	50 1.47	53 12 10.0 26.3	III	46.620	12 51 11.11	14 24 24.35	14 3608
19	9.2	43.0	45.4	47.3	49.2	51.2	e	50 17.53	55 18 10.0 26.6	VII	43.280	12 51 27.25	16 29 29.54	16 3569
20	9.0	18.8	20.7	22.7	24.6	26.9	a	53 52.10	53 30 10.0 26.2	I	47.570	12 55 1.76	−14 42 40.85	−14 3619
21	9.2	54.6	56.2	58.3	0.2	2.4	a	54 27.78	54 2 10.0 26.2	I	48.910	12 55 37.47	−15 15 7.68	−15 3577
22	8.1	43.8	45.6	47.7	49.7	51.9	a	55 17.29	54 50 10.0 26.2	III	46.860	12 56 27.01	16 2 32.47	15 3580
23	9.1	56.5	58.4	0.3	2.1	4.5	a	56 29.74	53 38 10.0 26.6	I	43.480	12 57 39.42	14 49 23.18	14 3626
24	9.1	1.4	3.4	5.6	7.7	9.9	c	57 5.61	55 32 10.0 27.0	III	43.345	12 58 15.37	16 43 27.66	16 3589
25	8.0	47.5	49.5	51.6	53.8	55.9	c	57 51.67	55 32 " "	III B	(49).040	12 59 1.43	−16 42 3.65	−16 3592

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
26	9.1	21.2	23.7	25.6	27.2	29.3	e	57 55.88	54 2	10.0	26.1	VII	47.315	12 59 5.58	−15 14 41.67	−14 3634
27	9.1	21.4	23.2	25.3	27.3	29.5	a	0 54.96	55 20	10.0	26.3	I	47.310	13 2 4.73	16 32 39.94	16 3602
28	8.8	31.4	33.0	35.0	37.0	39.0	a	2 4.46	53 36	10.0	26.1	I	44.030	13 3 14.15	14 47 32.51	14 3650
29	9.1	41.5	43.4	45.0	47.2	49.4	a	2 14.68	53 36	“	“	III	48.850	13 3 24.38	14 49 6.02	14 3651
30	8.5	31.6	33.6	35.7	38.0	40.0	c	2 35.79	55 56	10.0	27.0	V	46.690	13 3 45.60	−17 8 33.32	−16 3605
31	8.7	43.1	44.8	49.0	51.2	53.3	b_2 c_3	3 53.27	53 38	10.0	26.7	III	43.880	13 5 2.98	−14 49 31.56	−14 3657
32	8.6	31.0	33.4	35.2	37.0	39.0	e	4 5.58	54 16	10.0	26.5	VII	46.070	13 5 15.32	15 28 17.86	15 3609
33	8.6	24.0	26.3	28.4	32.8	34.1	c_3 d_2	5 24.12	54 46	10.0	26.0	V	48.055	13 6 33.89	15 58 55.07	15 3611
34	9.3	1.0	3.3	5.1	7.0	9.0	e	7 35.33	55 42	10.0	26.0	VII	43.750	13 8 45.16	16 53 36.85	16 3620
35	9.1	46.9	49.0	51.2	53.4	55.6	c	8 51.23	55 42	“	“	III A	42.840	13 10 1.06	16 56 29.36	16 3627
36	8.8	18.8	20.7	22.7	24.7	26.9	a	10 52.13	53 32	10.0	25.9	I	47.815	13 12 1.86	14 44 42.86	14 3681
37	9.3	42.9	44.9	47.0	51.1	......	c_3 d_1	15 42.75	54 26	10.0	25.6	V	47.320	13 16 52.54	15 38 38.26	15 3655
38	8.0	45.0	46.5	50.7	52.8	54.9	b_2 c_3	22 55.05	57 0	10.0	26.5	III	47.125	13 24 5.02	18 12 39.52	17 3862
39	9.6	34.9	37.0	39.0	41.0	43.0	e	23 9.36	54 50	10.0	26.3	VII	48.100	13 24 19.21	16 2 54.63	15 3676
40	9.4	31.4	33.2	35.2	37.2	39.4	a	25 4.75	54 16	10.0	26.5	III	44.140	13 26 14.57	−15 27 34.33	−15 3683
41	9.3	20.0	22.0	24.1	26.5	28.7	c	25 24.27	54 16	“	“	III A	47.710	13 26 34.10	−15 31 55.33	−15 3684
42	8.9	28.4	30.6	32.4	34.0	36.4	e	26 2.74	54 50	10.0	26.4	V	46.540	13 27 12.60	16 2 22.96	15 3692
43	9.1	15.7	18.0	20.1	22.4	24.4	c	27 20.13	53 58	10.0	26.1	V	43.510	13 28 29.94	15 9 22.53	14 3743
44	......	34.9	37.3	39.2	41.0	43.0	e	28 9.55	54 8	10.0	26.2	V	44.270	13 29 19.37	15 19 37.33	15 3697
45	8.2	21.3	23.0	24.9	26.9	29.5	a	30 54.53	53 52	10.0	26.0	III	48.870	13 32 4.35	15 5 1.90	14 3756
46	8.3	34.4	36.7	38.5	40.4	42.4	e	38 8.68	56 0	10.0	26.1	V	47.410	13 39 18.66	17 12 40.23	16 3737
47	9.1	0.2	2.3	4.5	6.7	8.8	c	39 4.51	56 0	“	“	V A	43.550	13 40 14.50	17 14 39.54	17 3922
48	8.0	7.7	9.5	11.6	13.5	15.7	a	40 41.23	55 22	10.0	26.4	III	47.230	13 41 51.18	16 34 32.92	16 3744
49	7.9	14.4	16.5	18.7	20.9	23.2	c	41 18.75	56 52	10.0	27.8	III	46.520	13 42 28.80	18 4 24.45	17 3934
50	8.8	11.5	13.7	15.9	18.0	20.0	c	42 15.83	55 16	10.0	27.0	V	48.320	13 43 25.78	16 28 54.97	−16 3747
51	9.1	54.2	56.0	58.0	0.0	2.0	a	43 27.66	55 16	“	“	III A	(47).705	13 44 37.62	−16 31 54.44	−16 3751
52	9.0	11.3	13.0	15.0	17.0	19.0	a	45 44.42	53 28	10.0	26.5	I	45.280	13 46 54.26	14 39 47.67	14 3820
53	8.0	5.3	6.9	9.0	11.0	13.3	a	46 38.58	54 18	10.0	26.4	I	46.575	13 47 48.48	15 30 14.27	15 3756
54	......	36.2	38.0	40.0	42.0	44.2	a	47 9.55	54 18	“	“	I B	46.350	13 48 19.45	15 26 57.62	15 3761
55	8.8	37.4	39.3	41.3	43.3	45.6	a	48 11.12	56 2	10.0	26.2	I	47.240	13 49 21.15	17 14 31.39	17 3959
56	8.0	35.5	37.4	39.4	41.3	43.7	a	49 9.28	56 34	10.0	27.2	I	44.020	13 50 19.35	17 45 32.09	17 3961
57	9.3	40.0	41.8	43.8	45.7	47.8	a	50 13.24	53 56	10.0	26.8	I	46.700	13 51 23.13	15 8 15.02	14 3833
58	9.0	32.7	34.9	37.0	39.2	41.3	c	50 37.03	55 22	10.0	26.5	III	45.810	13 51 47.02	16 34 3.64	16 3767
59	9.3	1.7	3.6	5.5	7.4	9.5	a	51 35.18	55 22	“	“	III A	46.250	13 52 45.18	16 37 24.87	16 3772
60	8.7	48.4	50.5	52.7	54.9	57.0	c	51 52.71	55 56	10.0	26.9	V	46.360	13 53 2.75	−17 8 17.27	−16 3773
61	8.8	14.8	17.0	19.0	21.2	23.6	c	52 19.13	55 56	“	“	V	47.290	13 53 29.17	17 8 34.88	−16 3774
62	9.4	43.4	45.0	47.0	49.1	51.1	a	54 16.92	56 26	10.0	27.5	I	44.320	13 55 27.01	17 37 36.20	17 3979
63	8.5	39.3	41.2	43.0	45.0	47.4	a	55 12.95	56 12	10.0	27.3	I	47.440	13 56 23.02	17 24 34.56	17 3982
64	9.3	0.0	1.9	3.8	5.8	8.0	a	56 33.80	57 0	10.0	27.4	I	48.330	13 57 43.94	18 12 53.67	18 3732
65	9.2	50.2	52.0	54.0	56.0	58.2	a	57 23.84	56 12	10.0	27.2	I	42.235	13 58 33.92	17 22 54.88	17 3990
66	9.1	2.8	4.6	6.5	8.5	10.6	a	58 36.36	56 12	“	“	I B	45.120	13 59 46.45	17 20 37.22	17 4000
67	9.3	35.8	37.9	40.0	42.1	44.4	c	58 40.05	56 12	“	“	III (A)	40.260	13 59 50.14	17 25 31.89	17 4001
68	9.2	44.2	45.8	50.0	52.0	54.2	b_2 c_3	59 54.23	53 50	10.0	27.2	III	45.550	14 1 4.14	15 1 52.42	14 3872
69	9.3	59.6	1.6	3.7	5.9	8.0	c	0 3.77	53 50	“	“	VI	49.130	14 1 13.69	15 3 2.91	14 3874
70	8.8	45.2	47.6	49.5	51.4	53.4	e	1 19.97	53 36	10.0	26.6	V	43.620	14 2 29.87	−14 47 16.03	−14 3880
71	8.9	25.9	27.6	29.7	31.6	34.0	a	3 59.67	57 4	10.0	27.3	I	44.120	14 5 9.85	−18 15 31.78	−18 3761
72	8.7	2.0	3.9	5.9	7.7	10.1	a	4 35.55	55 20	10.0	26.5	III	49.370	14 5 45.60	16 33 7.75	16 3822
73	9.0	7.0	9.0	10.8	12.9	15.0	a	5 40.85	57 4	10.0	27.5	I	47.290	14 6 51.04	18 16 31.79	18 3769
74	8.8	31.3	33.6	35.8	38.0	40.0	c	6 35.75	53 58	10.0	25.8	V	43.840	14 7 45.70	15 9 19.39	14 3900
75	8.9	2.8	5.2	7.0	9.0	11.0	e	6 37.50	53 58	“	“	VII	40.510	14 7 47.45	15 8 17.45	14 3901
76	9.3	......	2.4	4.4	6.0	8.0	e	7 34.56	54 50	10.0	25.9	VII	44.270	14 8 44.58	16 1 31.19	15 3831
77	9.1	58.1	0.3	2.2	4.4	6.7	c	9 2.35	54 50	“	“	III A	47.110	14 10 12.38	16 5 34.88	15 3836
78	9.1	39.7	41.9	44.0	48.0	49.8	c_3 d_2	9 39.72	52 54	10.0	26.0	V	47.740	14 10 49.59	14 6 30.07	13 3862
79	9.1	38.0	40.0	42.2	44.5	46.6	c	10 42.27	56 6	10.0	26.6	V	43.600	14 11 52.41	17 17 20.22	17 4057
80	8.7	31.6	33.9	36.0	38.2	40.5	c	11 36.05	56 6	“	“	III	40.280	14 12 46.20	−17 16 15.14	−17 4061
81	9.2	14.7	17.0	19.0	21.0	22.9	e	11 49.11	56 6	“	“	V B	41.400	14 12 59.26	−17 13 25.62	−17 4062
82	8.8	45.0	47.0	49.3	51.0	53.4	e	14 19.31	56 14	10.0	27.0	V B	37.020	14 15 29.48	17 20 2.17	17 4069
83	9.1	14.3	16.6	18.5	20.2	22.3	e	14 48.52	56 14	“	“	VII A	47.205	14 15 58.70	17 29 42.62	17 4072
84	9.0	19.9	22.0	24.0	28.5	30.0	c_3 d_2	16 19.85	55 50	10.0	26.7	V	45.630	14 17 30.00	17 1 56.54	16 3856
85	9.0	10.0	12.0	14.2	16.4	18.6	c	17 14.25	53 18	10.0	26.0	V	46.930	14 18 24.19	14 30 13.57	14 3944
86	8.9	18.0	20.0	22.0	24.0	26.2	a	19 51.96	57 10	10.0	27.4	I	46.280	14 21 2.24	18 22 8.93	18 3821
87	8.1	12.2	14.4	16.5	18.7	20.9	c	20 16.55	56 0	10.0	27.6	III	46.220	14 21 26.73	17 12 5.96	16 3867
88	8.6	57.4	59.2	1.3	3.3	5.5	a	21 31.02	55 38	10.0	26.9	I	47.985	14 22 41.18	16 50 35.93	16 3872
89	8.9	57.7	59.8	2.0	4.0	6.4	c	22 1.99	55 56	10.0	26.7	III	45.780	14 23 12.17	17 7 56.43	16 3874
90	9.2	32.5	34.8	36.7	38.4	40.5	e	22 6.79	55 56	“	“	V B	45.560	14 23 16.97	−17 4 41.44	−16 3876
91	9.0	13.0	14.9	16.9	21.3	22.9	c_3 d_2	24 12.79	55 14	10.0	27.0	V B	43.375	14 25 22.91	−16 21 57.32	−16 3882
92	9.0	51.0	53.0	55.2	59.5	0.9	(c_3d_2)	24 50.91	55 14	“	“	VI B	41.290	14 26 1.04	16 21 18.16	16 3886
93	9.0	35.4	37.8	39.6	41.5	43.5	e	26 9.94	54 50	10.0	26.8	V	43.970	14 27 20.04	16 1 19.20	15 3894
94	9.1	54.6	56.7	58.9	3.3	4.8	c_3d_2	26 54.66	54 50	“	“	V B	41.000	14 28 4.76	15 57 10.03	15 3897
95	9.3	54.1	56.3	58.2	0.1	2.2	a	28 27.73	54 50	“	“	I	43.200	14 29 37.84	16 1 0.38	15 3903
96	9.3	26.5	28.3	30.0	32.0	34.4	a	29 59.79	54 50	“	“	I B	50.480	14 31 9.91	16 0 6.22	15 3906
97	8.7	18.3	20.0	22.0	24.0	26.3	a	30 51.68	54 54	10.0	26.5	III	46.620	14 32 1.81	16 6 6.60	15 3911
98	8.6	9.2	11.0	13.0	15.0	17.2	a	31 42.64	54 54	“	“	I	48.110	14 32 52.77	−16 6 32.88	−15 3914

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
99	9.3	23.9	25.9	27.8	29.6	31.6	a	31 57.32	54 54 10.0 26.5	III 41.750	14 33 7.45	−16 4 33.56	−15 3915
100	8.6	24.0	25.8	27.9	29.9	32.1	a	32 57.51	54 54 " "	III A 47.175	14 34 7.65	−16 9 29.64	−15 3920
101	9.4	30.0	32.0	34.0	35.8	38.0	a	34 3.74	56 22 10.0 27.2	I 42.110	14 35 14.01	−17 32 42.65	−17 4146
102	8.2	28.7	30.6	32.6	34.5	36.8	a	35 2.55	57 2 10.0 27.9	I 47.580	14 36 12.89	18 14 28.97	18 3879
103	9.3	12.0	14.0	15.8	17.7	20.0	a	38 45.31	53 54 10.0 26.0	I 43.050	14 39 55.37	15 4 51.31	14 4021
104	7.7	43.7	45.4	47.3	49.3	51.4	a	39 16.82	53 54 " "	I B 45.110	14 40 26.88	15 2 18.10	14 4023
105	9.0	14.9	17.1	19.1	21.5	23.7	c	40 19.27	54 52 10.0 26.3	V 43.850	14 41 29.43	16 3 12.33	15 3949
106	9.2	10.0	12.0	14.0	15.7	18.0	a	41 43.74	56 26 10.0 27.4	III 47.010	14 42 54.06	17 38 15.67	17 4180
107	9.3	1.0	2.7	4.8	6.6	8.8	a	42 34.34	54 56 10.0 25.8	III 47.720	14 43 44.52	16 8 23.57	15 3962
108	9.4	31.4	33.1	35.3	37.3	39.4	a	46 4.91	55 16 10.0 26.4	III B 43.010	14 47 15.13	16 23 41.74	16 3955
109	9.1	25.2	26.9	28.9	30.8	33.0	a	46 58.58	55 16 " "	I A 46.260	14 48 8.81	16 31 7.01	16 3958
110	9.5	14.4	16.1	18.2	20.0	22.1	a	48 47.77	55 12 10.0 26.9	I 46.560	14 49 58.00	−16 23 58.96	−16 3965
111	9.4	29.8	31.8	33.5	35.7	37.9	a	49 3.34	55 12 " "	III B 41.950	14 50 13.56	−16 19 20.62	−16 3967
112	7.8	1.3	3.0	5.0	7.0	9.4	a	49 34.74	55 12 " "	III 45.590	14 50 44.97	16 23 42.06	16 3970
113	9.4	13.8	15.7	17.6	19.5	21.8	a	50 47.46	56 24 10.0 26.9	III B 42.810	14 51 57.80	17 31 40.03	17 4219
114	9.1	54.6	56.9	59.0	1.3	3.4	c	50 5.05	56 24 " "	V 48.295	14 52 9.41	17 36 38.35	17 4220
115	8.0	50.8	52.9	55.0	57.4	59.5	c	51 55.13	56 4 10.0 27.8	V 48.525	14 53 5.45	17 16 41.84	17 4225
116	8.5	29.0	31.0	33.4	35.6	37.8	c	53 33.37	57 2 10.0 27.9	III 45.420	14 54 43.80	18 13 43.66	18 3945
117	8.7	16.8	18.5	20.5	22.3	24.6	a	54 50.02	54 20 10.0 27.0	III 47.550	14 56 0.18	15 32 15.13	15 4008
118	9.0	22.0	24.0	26.0	28.0	30.2	a	55 55.91	56 52 10.0 27.7	I 43.210	14 57 6.33	18 2 58.29	17 4240
119	8.4	14.8	16.7	18.6	20.4	22.7	a	56 48.21	55 0 10.0 27.4	III 46.480	14 57 58.45	16 11 56.19	16 3992
120	9.4	6.5	8.7	10.5	12.5	14.4	e	58 40.98	54 14 10.0 26.6	VII 47.740	14 59 51.15	−15 26 20.00	−15 4021
121	8.9	58.2	0.4	2.7	5.0	7.1	c	0 2.69	56 30 10.0 28.0	V 48.880	15 1 13.10	−17 42 47.27	−17 4252
122	8.0	42.0	44.0	46.2	50.4	52.0	c_3 d_2	0 41.94	53 50 10.0 27.0	V 46.290	15 1 52.07	15 1 49.34	14 4120
123	8.5	53.3	55.6	57.5	59.2	1.4	e	1 27.67	55 30 10.0 27.1	V 48.020	15 2 37.98	16 42 26.86	16 4012
124	9.1	36.6	38.7	40.9	43.0	45.4	c	2 40.93	56 50 10.0 28.4	V 43.220	15 3 51.38	18 0 59.85	17 4260
125	9.3	34.4	36.4	38.3	40.2	42.6	a	4 8.28	57 0 10.0 28.6	I 45.200	15 5 18.75	18 11 34.19	18 3993
126	9.3	13.0	14.9	16.9	18.7	21.0	a	8 46.53	55 22 10.0 27.4	I 46.310	15 9 56.85	16 33 47.98	16 4039
127	8.4	54.9	56.8	58.9	0.9	3.0	a	9 28.81	57 4 10.0 27.7	I 45.080	15 10 39.31	18 15 29.77	18 4017
128	9.3	5.7	7.0	11.4	13.5	15.6	b_2 c_3	12 15.61	53 20 10.0 25.6	III 45.480	15 13 25.72	14 31 26.04	14 4171
129	9.1	40.2	42.0	44.0	45.9	48.0	a	13 13.29	52 50 10.0 26.0	III 47.625	15 14 23.35	14 2 5.35	13 4129
130	9.1	37.6	39.5	41.5	43.6	45.7	a	14 11.49	57 6 10.0 27.0	III 45.850	15 15 22.02	−18 17 44.35	−18 4043
131	9.0	34.2	36.0	38.0	40.0	42.3	a	15 7.86	56 8 10.0 26.6	III 44.475	15 16 18.29	−17 19 14.52	−17 4316
132	9.5	42.9	44.7	48.7	50.9	53.0	b_2 c_3	15 53.07	55 20 10.0 25.6	III 47.190	15 17 3.41	16 32 2.97	16 4067
133	9.3	47.4	49.0	51.0	53.0	55.4	a	17 20.89	56 0 10.0 25.8	I 44.695	15 18 31.31	17 11 15.22	17 4322
134	9.2	......	26.7	28.7	30.6	32.7	a	17 58.58	56 54 10.0 27.5	III B 42.410	15 19 9.10	18 1 24.68	17 4325
135	8.0	26.4	28.0	30.0	32.2	34.3	a	19 0.08	56 54 " "	I A 48.820	15 20 10.63	18 9 50.08	18 4061
136	9.1	12.6	14.5	16.5	18.4	20.6	a	19 45.80	52 56 10.0 26.5	III 46.050	15 20 55.90	−14 7 33.45	−13 4162

Reduction Elements. Zone 50.

	OBSERVED.			ADOPTED.		
1894.	c	b	a	c	b	a
	s	s	s	s	s	s
May 28.4....	+0.037	−0.289	−0.157 −0.136	+0.038	−0.258	−0.156
28.5....	+0.040	−0.228	−0.175			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ε Corvi		γ Corvi		Piazzi XII. 54		β Corvi*		γ Hydrae		μ Virginis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	60 52 3.70		55 46 3.50		51 48 3.50		61 38 3.45		61 26 2.95		44 2 3.80	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.390	5 2.19	48.685	6 42.46	47.525	6 20.06	45.815	5 41.48	46.185	5 55.29	45.780	5 47.25
II Red. to Mer......	.320	1.58	.620	1.64	.420	1.68	.770	1.57	.140	1.57	.710	1.75
VI Inclination	.220		.450		.270		.930		.000		.540	
VII Refraction	.150	1 42.3	.410	1 24.0	.240	1 12.8	.930	1 45.9	45.920	1 45.4	.525	56.0

	α Librae		β Librae		32 Librae	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 26 2.95		47 50 3.10		55 10 3.15	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.310	5 38.87	44.360	5 20.62	47.475	6 19.49
II Red. to Mer......	.260	1.65	.310	1.71	.430	1.65
VI Inclination	.120		.155		.240	
VII Refraction	.100	1 20.9	.130	1 4.0	.190	1 23.4

* Bisections discordant.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Corvi	12 3 49.16	11	−0.24	+52.79	60 58 49.8	44.0
4 H. Draconis	12 6 27.75	6	−0.31	[+52.72]	320 44	....
γ Corvi	12 9 30.26	11	−0.25	+52.67	55 54 11.6	44.1
Piazzi XII. 54	12 15	..	....	.....	51 55 38.0	43.9
β Corvi	12 27 58 18	11	−0.24	+52.68	61 45 42.4	[46.7]
γ Hydrae	13 12 18.86	11	−0.24	+52.70	61 33 45.2	42.7
α Ursae Minoris S. P.	13 18 15.80	4	−0.18	[+53.43]	307 42	....
μ Virginis	14 36 38.14	11	−0.26	+52.72	44 8 48.8	44.0
α Librae	14 44 10.57	11	−0.25	+52.76	54 33 4.4	43.8
48 H. Cephei S. P	15 5 55.03	8	−0.29	[+52.67]	296 18	....
β Librae	15 10 27.98	11	−0.25	+52.71	47 56 29.4	44.4
32 Librae	15 21 26.55	11	−0.25	+52.74	55 17 47.7	43.8

h		s
12.475	*dt*	+52.710
	Hourly rate	+ 0.0088
		° ′ ″
	Adopted Equator Point	38 56 43.84

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
12 5	29.655	56.5	54.2
12 40	29.675	55.4	52.8
13 33	29.685	53.1	50.9
14 20	29.695	52.3	49.6
15 25	29.695	50.3	47.4

Note.
ε Corvi. Very high wind.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.250	12 0	......	......	......	+17.045	+17.054	+17.062
53	0.249	12 30	......	+17.109	+17.134	17.161	17.187	17.214
54	0.248	13 0	......	17.195	17.236	17.280	17.325	17.368
55	0.247	13 30	......	17.283	17.342	17.402	17.462	17.523
56	0.246	14 0	+17.297	17.371	17.446	17.523	17.597	17.675
57	−0.246	14 30	17.373	17.461	17.550	17.639	17.729	17.819
		15 0	17.447	17.549	17.650	17.753	17.855	17.959
		15 30	+17.521	+17.633	+17.746	+17.857	+17.971	+18.087

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894.0						*R*					
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
12 0	.....	.....	.....	−15.17	−15.46	−15.77	74.20	76.93	79.78	82.79	85.94	89.27
12 30	.....	−15.37	−15.66	15.94	16.23	16.51	74.42	77.16	80.02	83.04	86.20	89.54
13 0	.....	15.98	16.24	16.50	16.77	17.02	74.61	77.36	80.22	83.25	86.42	89.76
13 30	.....	16.36	16.60	16.83	17.06	17.29	74.78	77.54	80.41	83.44	86.62	89.97
14 0	−16.31	16.52	16.73	16.92	17.12	17.32	74.92	77.68	80.56	83.60	86.78	90.14
14 30	16.28	16.44	16.62	16.78	16.94	17.10	75.08	77.84	80.72	83.77	86.96	90.32
15 0	16.01	16.14	16.26	16.39	16.51	16.64	75.23	78.00	80.89	83.95	87.14	90.51
15 30	−15.53	−15.62	−15.70	−15.78	−15.87	−15.95	75.37	78.14	81.04	84.10	87.30	90.68

1894 JUNE 2. ZONE 51. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	......	32.9	35.1	37.0	39.1	41.1	e	33 7.33	55 22 10.0 28.4	VII	45.340	12 34 18	−16 34 10.82	−16 3512
2	......	32.8	35.2	37.0	38.9	40.9	e	34 7.26	55 22 " "	VII B	45.450	12 35 18	16 31 0.39	16 3517
3	9.5	11.6	13.5	15.5	17.4	19.6	a	42 44.92	53 46 10.0 28.0	III	44.530	12 43 56	14 57 47.06	14 3584
4	8.3	20.8	22.5	24.5	26.3	28.6	a	44 54.14	55 10 10.0 27.5	I	46.100	12 46 5	16 22 18.23	16 3548
5	8.7	14.8	16.6	18.9	21.0	23.0	c	45 18.87	53 56 10.0 26.7	III	47.910	12 46 30	15 8 50.89	14 3594
6	9.1	13.2	15.3	17.6	19.7	21.8	c	46 17.53	52 56 10.0 27.4	III	48.520	12 47 29	14 9 0.31	13 3611
7	9.3	11.3	13.0	15.1	17.1	19.5	a	48 45.07	56 48 10.0 29.8	I	45.520	12 49 56	18 0 12.38	17 3733
8	9.2	10.6	12.4	14.1	16.3	18.4	a	49 44.08	55 56 10.0 28.2	I	45.520	12 50 55	17 8 9.01	16 3566
9	8.1	48.8	50.6	52.3	54.5	56.8	a	50 21.95	53 22 10.0 26.3	III	45.440	12 51 33	14 34 1.69	14 3613
10	8.9	50.7	53.0	54.8	56.7	58.8	(e)	50 24.86	56 50 10.0 29.3	VII	47.330	12 51 36	−18 2 51.39	−17 3739
11	9.0	20.4	22.2	24.2	26.2	28.5	a	56 54.08	56 22 10.0 28.2	I	42.570	12 58 5	−17 33 13.17	−17 3760
12	8.8	59.5	1.4	3.4	5.4	7.6	a	57 33.17	55 52 10.0 27.6	III	48.120	12 58 44	17 4 58.83	16 3591
13	......	59.2	1.0	3.0	5.0	7.2	a	58 32.80	55 52 " "	I A	48.680	12 59 44	17 8 20.76	16 3596
14	9.1	38.9	41.0	42.9	45.0	47.0	a	59 12.40	54 6 10.0 27.4	III	48.250	13 0 23	−15 18 56.32	−15 3596

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.		CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0			δ 1900.0			B. D.	
		s	s	s	s	s		m	s	°	′	″	″		r	h	m	s	°	′	″	°	
15	9.7	6.0	8.1	10.5	12.6	14.8	c	0	10.41	54	42	10.0	27.0	V	47.990	13	1	21	−15	54	54.17	15	3597
16	9.3	37.5	39.3	41.2	43.0	45.4	a	2	10.77	54	26	10.0	27.9	I	45.560	13	3	22	15	38	3.97	15	3600
17	9.3	33.0	34.7	36.6	38.6	40.9	a	8	6.49	56	2	10.0	29.0	I	42.920	13	9	17	17	13	17.63	16	3624
18	7.7	28.9	30.6	32.6	34.5	36.7	a	11	2.06	53	48	10.0	26.8	I	49.050	13	12	13	15	1	6.86	14	3683
19	8.8	26.3	28.2	30.1	32.0	34.2	a	11	59.49	53	14	10.0	26.7	I	44.920	13	13	10	14	25	46.66	14	3688
20	9.3	11.6	13.5	15.4	17.4	19.6	a	12	44.79	53	0	10.0	27.2	III	48.520	13	13	56	−14	12	56.54	−13	3688
21	9.4	22.3	24.6	26.9	31.2	32.6	c_3 d_2	13	22.46	57	4	10.0	28.5	V	46.830	13	14	33	−18	16	37.40	−18	3581
22	8.7	20.2	22.4	24.3	26.2	28.2	(e)	13	54.61	54	58	9.5	26.5	VII	47.300	13	15	6	16	10	40.54	15	3644
23	9.5	25.6	27.7	29.4	31.5	33.7	a	15	59.21	55	22	11.0	28.2	III A	45.530	13	17	10	16	37	19.19	16	3646
24	9.1	38.4	40.2	42.0	44.0	46.0	a	17	11.73	55	22	"	"	I B	39.780	13	18	23	16	29	2.36	16	3651
25	9.5	23.5	25.1	29.1	31.4	33.5	b_2 c_3	17	33.55	55	22	"	"	V A	43.060	13	18	45	16	36	33.43	16	3652
26	7.3	28.5	30.6	32.8	35.0	37.2	c	18	32.83	53	54	10.0	27.1	V	47.450	13	19	44	15	6	38.92	14	3717
27	9.0	34.0	35.5	39.7	41.7	44.0	b_2 c_3	19	43.95	53	4	10.0	27.0	III	46.610	13	20	55	14	16	18.99	14	3721
28	7.0	27.3	28.8	33.1	35.3	37.5	b_2 c_3	20	37.45	56	16	10.0	27.9	III B	44.270	13	21	48	17	24	30.82	17	3850
29	8.6	57.8	0.0	2.1	4.3	6.5	c	21	2.15	56	16	"	"	V A	43.890	13	22	13	17	30	50.44	17	3851
30	8.9	35.9	37.8	39.6	41.5	43.6	a	25	9.05	53	38	10.0	26.8	I B	42.320	13	26	20	−14	45	43.58	−14	3733
31	6.3	46.7	48.5	50.4	52.3	54.7	a	26	19.91	53	38	"	"	I	48.600	13	27	31	−14	50	55.08	−14	3739
32	9.1	4.3	6.0	8.2	10.0	12.3	a	27	37.79	55	22	10.0	28.5	I	44.260	13	28	49	16	33	37.58	16	3696
33	9.2	33.5	35.4	37.4	39.2	41.6	a	28	7.00	55	2	10.0	27.5	III	45.450	13	29	18	16	14	0.57	15	3696
34	9.1	36.8	38.9	41.0	43.2	45.2	c	29	41.03	52	54	10.0	27.0	III	47.970	13	30	52	14	6	42.56	13	3731
35	9.5	28.1	30.3	32.5	36.7	38.5	c_3 d_2	30	28.21	55	20	10.0	27.6	V	47.590	13	31	39	16	32	43.32	16	3707
36	9.2	23.4	25.4	27.7	29.9	32.1	c	31	27.71	55	0	10.0	27.1	V	46.030	13	32	39	16	12	12.28	15	3708
37	9.5	8.0	10.0	12.1	16.2	17.8	c_3 d_2	32	7.83	54	44	9.0	26.3	V B	41.980	13	33	19	15	51	41.03	15	3709
38	9.4	3.3	5.3	7.5	11.9	13.2	c_3 d_2	33	3.24	54	44	"	"	V A	39.110	13	34	14	15	57	11.59	15	3712
39	7.5	49.4	51.7	53.6	55.4	57.5	e	33	23.91	54	44	"	"	VII	46.470	13	34	35	15	56	20.07	15	3715
40	8.0	56.9	58.3	2.6	4.8	7.0	b_2 c_3	35	6.98	56	50	10.4	29.3	V	47.780	13	36	18	−18	2	51.29	−17	3907
41	9.3	12.0	14.0	16.2	20.4	22.0	c_3 d_2	36	11.96	53	20	9.6	26.7	V	46.490	13	37	23	−14	32	15.33	−14	3781
42	8.9	45.6	47.9	49.8	51.6	53.7	e	36	20.31	53	20	"	"	VII	45.000	13	37	31	14	31	48.41	14	3783
43	9.2	2.1	4.5	6.3	8.2	10.3	e	37	36.66	54	48	10.0	27.2	V	44.600	13	38	48	15	59	43.24	15	3729
44	9.4	21.5	24.0	25.8	27.8	29.8	e	37	56.17	54	48	"	"	VII B	41.810	13	39	7	15	55	39.06	15	3732
45	9.4	47.3	49.6	51.5	53.5	55.5	e	52	21.60	56	26	10.0	28.5	VII	42.810	13	53	33	17	37	12.38	17	3970
46	9.3	24.6	26.5	28.4	30.4	32.6	a	55	57.96	54	12	10.0	27.0	I	47.660	13	57	9	15	24	32.02	15	3792
47	9.4	21.2	23.0	25.0	26.9	29.1	a	57	54.68	55	26	10.0	28.6	I A	37.220	13	59	6	16	38	30.14	16	3791
48	9.3	53.1	55.2	57.3	59.4	1.8	c	57	57.37	55	26	"	"	III B	36.970	13	59	9	16	32	1.65	16	3792
49	6.8	1.2	3.6	5.4	7.3	9.2	e	58	35.74	54	40	10.0	26.8	V	43.875	13	59	47	15	51	23.87	15	3805
50	8.6	57.2	59.3	1.2	3.0	5.1	e	59	31.38	55	50	10.0	27.8	V	47.520	14	0	43	−17	2	36.75	−16	3798
51	7.5	18.8	21.1	22.9	24.8	26.8	e	59	53.11	55	50	"	"	VII B	45.310	14	1	5	−16	58	43.56	−16	3802
52	8.8	17.5	19.8	21.8	23.6	25.5	e	0	51.78	56	18	10.0	27.4	VII	48.230	14	2	3	17	30	52.47	17	4010
53	6.5	38.0	39.9	41.9	43.8	46.0	a	4	11.45	54	38	10.0	27.8	I	45.310	14	5	23	15	49	46.68	15	3817
54	9.3	38.4	40.2	42.1	44.0	46.1	a	5	11.93	56	18	10.0	27.8	I B	38.950	14	6	23	17	24	37.72	17	4025
55	9.2	0.5	2.2	4.1	6.0	8.1	a	5	33.97	56	18	"	"	III A	47.820	14	6	45	17	33	53.65	17	4027
56	9.5	41.0	43.3	45.5	47.7	49.8	c	6	45.47	54	42	10.0	27.0	V	43.925	14	7	57	15	53	22.86	15	3827
57	9.4	25.0	27.1	29.5	31.6	33.7	c	7	29.39	56	22	10.0	27.8	V	45.410	14	8	41	17	33	55.97	17	4036
58	9.5	7.6	9.6	11.8	14.0	16.1	c	8	11.83	56	58	10.0	28.5	V	42.610	14	9	23	18	9	4.61	17	4043
59	9.3	11.2	12.6	16.9	19.0	21.3	b_2 c_3	9	21.26	56	46	10.0	28.5	III	43.920	14	10	32	17	57	27.01	17	4049
60	6.5	46.7	48.5	50.5	52.5	54.7	a.	10	20.47	56	54	10.0	28.3	III	49.715	14	11	32	−18	7	17.33	−17	4053
61	9.2	34.0	36.4	38.6	40.6	42.8	c	10	38.47	56	54	"	"	III B	42.090	14	11	50	−18	1	39.78	−17	4056
62	6.0	21.0	22.8	24.8	26.9	29.0	a	11	54.81	57	2	11.0	29.6	III	49.300	14	13	6	18	15	10.07	18	3789
63	9.6	2.3	4.7	6.8	9.0	11.0	c	13	6.77	55	10	10.0	27.8	V	(44).460	14	14	18	16	21	32.93	16	3840
64	9.3	1.4	3.1	5.0	7.2	9.3	a	14	35.12	57	10	10.0	29.3	III	43.720	14	15	47	18	21	23.36	18	3800
65	9.0	38.6	40.5	42.4	44.4	46.6	a	15	12.42	57	10	"	"	III	40.630	14	16	24	18	20	24.37	18	3804
66	9.1	56.7	58.2	2.0	4.5	6.5	b_2 c_3	16	6.63	56	24	10.0	29.0	III	46.100	14	17	18	17	36	5.76	17	4076
67	9.0	18.7	20.8	23.0	25.2	27.3	c	16	23.01	56	24	"	"	V	45.105	14	17	35	17	35	48.37	17	4078
68	9.2	16.4	18.4	20.1	22.1	24.5	a	17	50.10	56	24	"	"	I A	44.510	14	19	2	17	38	46.37	17	4083
69	9.4	3.4	5.1	7.1	9.1	11.2	a	20	36.57	53	40	10.0	26.7	I	43.580	14	21	48	14	51	6.03	14	3958
70	9.3	14.8	16.8	18.7	20.6	22.7	a	21	48.25	54	40	10.0	27.6	I	44.780	14	23	0	−15	51	31.56	−15	3878
71	9.3	10.9	12.6	14.7	16.6	18.7	a	22	44.61	57	4	10.6	29.8	I	43.030	14	23	56	−18	15	6.27	−18	3835
72	9.1	......	14.7	16.7	18.7	20.6	e	23	47.29	52	58	10.0	27.0	VII	44.920	14	24	59	14	9	33.86	13	3912
73	9.0	24.8	27.0	29.0	31.0	33.0	e	24	58.98	57	8	10.0	28.8	VII B	41.955	14	26	10	18	15	36.96	18	3843
74	8.9	12.3	14.6	16.5	18.3	20.4	e	25	46.42	57	8	"	"	V A	44.500	14	26	58	18	22	49.20	18	3846
75	9.0	14.1	16.3	18.2	20.0	22.0	e	26	48.70	53	22	10.0	26.5	VII	45.730	14	28	0	14	33	49.10	14	3978
76	9.1	18.0	20.0	22.2	24.4	26.5	c	28	22.23	52	54	10.0	26.8	III	45.125	14	29	33	14	5	32.99	13	3927
77	9.4	......	......	......	......	......	......	......	......	56	4	10.0	27.8	V	47.130	14	30	10	17	16	21.58	17	4119
78	9.3	......	......	......	......	......	......	......	......	56	46	10.0	28.8	III B	42.720	14	31	34	17	53	45.81	17	4126
79	9.4	22.5	24.6	26.8	28.9	31.2	c	30	26.81	56	46	"	"	V	47.390	14	31	38.33	17	58	28.66	17	4127
80	8.8	27.1	29.3	31.4	33.7	35.8	c	31	31.47	53	20	10.0	27.0	V	44.030	14	32	42.76	−14	31	13.98	−14	3996
81	9.4	27.4	29.1	33.3	35.6	37.6	b_2 c_3	32	37.57	53	2	10.0	27.2	III	47.870	14	33	48.84	−14	14	24.44	−14	4002
82	9.0	18.5	20.0	24.0	26.3	28.5	b_2 c_3	33	28.45	53	38	10.0	26.7	III	47.440	14	34	39.79	14	50	17.24	14	4003
83	8.9	39.5	41.2	43.4	45.3	47.5	a	34	12.77	53	38	"	"	III A	47.190	14	35	24.11	14	53	25.32	14	4006
84	9.3	45.0	46.9	49.0	51.2	53.4	c	34	49.11	52	50	10.0	27.4	III	46.840	14	36	0.37	14	2	3.72	13	3919
85	9.0	25.8	27.9	30.0	32.3	34.3	c	35	30.07	56	12	10.0	28.5	V	45.200	14	36	41.65	17	23	43.53	17	4152
86		55.5	57.7	59.6	1.4	3.2	e	37	29.96	54	6	10.0	27.3	III	46.270	14	38	41.35	15	17	55.18	15	3941
87	9.0	47.1	49.0	51.3	53.6	55.8	c	38	51.37	55	12	10.0	27.9	III B	41.560	14	40	2.86	16	19	16.07	16	3934
88	9.1	10.0	12.2	14.4	16.5	18.7	c	39	14.37	55	12	"	"	V A	44.380	14	40	25.88	16	26	36.53	16	3936
89	9.1	23.5	24.7	29.1	31.5	......	b_2 c_2	40	33.53	56	52	10.0	28.3	III	45.645	14	41	45.20	18	3	50.63	17	4177
90	9.0	9.8	11.6	13.4	15.5	17.8	a	41	43.00	53	42	10.0	27.2	I B	39.650	14	42	54.34	−14	48	32.67	−14	4031

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
91	9.5	0.0	2.0	3.7	5.9	8.2	a	42 33.35	53 42 10.0 27.2	I B 43.690	14 43 44.70	−14 49 49.29	−14 4035
92	9.2	31.0	33.0	35.3	37.5	39.5	c	42 35.27	53 42 “ “	III A 41.590	14 43 46.65	14 55 36.46	14 4036
93	9.4	15.3	17.2	19.3	21.7	23.8	c	43 19.47	53 42 “ “	V A 45.400	14 44 30.84	14 56 50.23	14 4038
94	8.0	59.1	1.4	3.3	5.2	7.1	e	43 33.75	53 42 “ “	V A 41.670	14 44 45.12	14 55 39.16	14 4040
95	8.7	57.0	58.6	2.7	4.9	7.2	b_2 c_3	45 7.07	53 42 “ “	III B 41.630	14 46 18.43	14 49 10.95	14 4052
96	8.6	38.9	40.4	44.7	46.7	49.0	b_2 c_3	45 48.93	53 42 “ “	III A 51.130	14 47 0.31	14 58 36.95	14 4055
97	8.9	43.9	46.2	48.0	49.9	52.0	e	46 18.02	57 8 10.0 28.2	VII B 40.370	14 47 29.74	18 14 59.69	18 3923
98	9.5	24.0	26.5	28.4	30.0	32.0	e	46 58.18	57 8 “ “	VII A 39.100	14 48 9.91	18 21 0.46	18 3925
99	9.0	19.7	21.7	23.9	26.0	28.3	c	48 23.93	56 34 10.0 28.6	V 43.770	14 49 35.60	17 45 13.21	17 4211
100	9.6	16.6	18.8	21.0	23.2	25.4	c	49 21.01	54 48 10.0 28.0	V 46.600	14 50 32.51	−16 0 1.37	−15 3987
101	9.1	3.3	5.0	9.1	11.3	13.5	b_2 c_3	50 13.45	54 48 “ “	III B 39.330	14 51 24.94	−15 54 28.76	−15 3989
102	7.0	7.9	9.6	13.8	15.8	18.0	b_2 c_3	51 18.06	55 44 10.0 28.2	III(A) 41.910	14 52 29.66	16 57 45.65	16 3972
103	9.2	32.5	34.7	37.0	40.8	42.7	c_3 d_2	51 32.52	55 44 “ “	V B 39.620	14 52 44.11	16 50 38.11	16 3973
104	9.4	30.5	32.3	34.2	36.2	38.4	a	53 3.78	54 12 10.0 27.4	III 45.500	14 54 15.22	15 23 35.61	15 4005
105	9.5	40.1	41.8	46.0	48.2	50.5	b_2 c_3	53 50.38	56(52) 10.0 28.8	III 43.000	14 55 2.10	18 2 56.09	17 4233
106	9.3	32.7	34.7	36.8	39.0	41.1	c	54 36.87	55 22 10.0 28.1	V B 42.210	14 55 48.43	16 29.25.28	16 3986
107	9.1	7.8	9.9	11.8	13.7	15.8	e	54 42.08	55 22 “ “	VII A 49.620	14 55 53.66	16 38 12.98	16 3987
108	9.6	44.4	46.7	48.6	50.6	52.7	e	59 18.90	55 26 10.0 27.8	VII B 38.650	15 0 30.48	16 32 17.25	16 4002
109	9.3	35.7	37.9	40.0	42.2	44.3	c	0 40.03	55 46 10.0 27.5	V A 38.940	15 1 51.67	16 58 47.11	16 4007
110	9.5	22.8	25.1	26.9	28.6	30.9	e	0 57.08	55 46 “ “	V A 42.940	15 2 8.72	−17 0 3.16	−16 4009
111	8.8	19.2	20.9	24.8	27.3	29.4	b_2 c_3	2 29.38	56 26 10.0 27.6	V 45.990	15 3 41.09	−17 37 49.68	−17 4259
112	8.8	10.8	12.5	16.7	18.8	21.0	b_2 c_3	3 21.02	56 26 “ “	III A 44.555	15 4 32.74	17 40 33.54	17 4263
113	8.8	13.0	14.7	18.8	20.9	23.0	b_2 c_3	4 23.11	55 24 10.0 28.0	III 44.080	15 5 34.72	16 35 8.22	16 4020
114	8.9	30.5	32.0	36.3	38.4	40.5	b_2 c_3	7 40.55	54 26 10.0 27.7	III 46.535	15 8 52.06	15 37 50.91	15 4059
115	9.6	26.8	28.3	32.4	34.4	36.9	b_2 c_3	8 36.75	53 54 10.0 27.5	III 47.270	15 9 48.21	15 6 3.03	14 4156
116	9.6	14.4	16.1	18.0	20.0	22.3	a	9 47.72	54 58 10.0 27.4	III 42.660	15 10 59.29	16 8 37.72	15 4068
117	9.3	31.9	33.8	35.7	37.6	39.9	a	13 5.21	53(48) 10.0 27.6	I 45.000	15 14 16.69	14 59 16.18	14 4175
118	8.5	37.7	39.3	41.3	43.4	45.5	a	14 10.87	53(48) “ “	I 49.570	15 15 22.35	15 0 42.76	14 4182
119	9.0	29.9	31.6	33.7	35.6	37.8	a	15 3.10	53 36 10.0 26.7	I 47.550	15 16 14.55	14 48 3.01	14 4184
120	9.2	3.8	5.3	9.6	11.6	14.0	b_2 c_3	15 13.84	53 36 “ “	III B 42.810	15 16 25.28	−14 43 22.22	−14 4185
121	7.5	42.2	44.0	46.0	48.0	50.3	a	16 15.48	53 36 “ “	I 43.090	15 17 26.93	−14 46 37.66	−14 4188
122	9.4	2.9	4.7	6.7	8.9	11.0	a	16 36.22	53 36 “ “	V A 38.630	15 17 47.67	14 48 29.05	14 4190
123	9.3	35.2	37.5	39.6	44.0	45.5	c_3 d_2	18 35.34	55 30 10.0 27.4	V A 44.650	15 19 47.02	16 44 28.49	16 4079
124	9.7	38.7	41.0	43.0	45.1	47.4	c	19 43.05	55 30 “ “	V 42.410	15 20 54.72	16 40 32.43	16 4085
125	9.1	10.3	12.6	14.5	16.2	18.2	e	19 44.62	55 30 “ “	VII A 44.820	15 20 56.30	16 44 32.57	16 4086
126	9.3	6.1	8.5	10.6	12.7	14.9	c	23 10.57	53 16 10.0 26.0	V 49.910	15 24 22.00	[14 28 17.05]	14 4218
127	9.8	31.3	33.5	35.5	37.5	39.3	e	24 6.04	53 2 10.0 26.8	VII 46.690	15 25 17.44	14 13 16.68	14 4219
128	9.6	43.5	45.0	49.4	51.5	53.6	b_2 c_3	25 53.57	52 56 10.0 27.0	III 48.920	15 27 4.97	14 7 55.18	13 4188
129	9.4	43.0.	45.4	47.1	51.4	53.6	b_1 c_2	26 55.60	53 20 10.0 27.3	II A (48).650	15 28 7.05	14 35 3.09	14 4229
130	8.8	9.0	10.2	14.7	16.6	19.0	b_2 c_3	27 18.87	53 20 “ “	III 48.790	15 28 30.32	−14 31 53.33	−14 4232
131	4.0	11.1	12.9	14.9	16.7	19.0	a	28 44.25	53 20 “ “	I B 44.740	15 29 55.69	−14 27 21.64	−14 4237
132	8.8	32.8	34.7	36.5	38.4	40.8	a	30 6.07	54 0 10.0 27.1	I 45.840	15 31 17.60	−15 10 55.95	−15 4144

Reduction Elements. Zone 51.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 2.3....	−0.061	−0.195	+0.028	−0.042	−0.260	+0.014
2.5....	−0.024	−0.324	+0.001			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi XII. 54		δ Corvi		β Corvi		53 Virginis		γ Scorpii		β Librae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	51 48 3.90		54 46 3.60		61 38 3.95		54 28 3.95		63 40 3.65		47 50 3.60	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	47.475	6 19.83	43.560	5 5.40	45.905	5 49.96	43.870	5 11.10	49.420	6 56.34		5 19.30
II Red. to Mer......	.435	1.68	.525	1.65	.855	1.57	.820	1.65	.285	1.55		1.71
VI Inclination	.260		.360		.725		.630		.210		44.170	2.04
VII Refraction.......	.240	1 10.1	.305	1 18.0	.640	1 42.0	.630	1 17.6	.170	1 52.3	.170	1 1.5

	32 Librae		41 Librae	
	° ′ ″		° ′ ″	
CIRCLE READING.	55 9 48.35		57 45 34.45	
	r	′ ″	r	′ ″
I Microm. Eq......		6 32.58	49.700	7 2.30
II Red. to Mer......		1.65	.620	1.62
VI Inclination	48.015	2.04	.520	
VII Refraction.......	.030	1 20.1	.500	1 28.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi XII. 54	12 14 34. 77	11	−0. 20	[+54. 18]	51 55 35. 5	41. 6
δ Corvi	12 23 30. 29	9	−0. 19	[+54. 13]	54 52 28. 6	42. 0
β Corvi	12 27 56. 72	11	−0. 17	[+54. 03]	61 45 37. 5	41. 8
43 H. Cephei S. P.	12 53 6. 86	5	+2. 67	[+54. 23]	304 38	....
53 Virginis	13 5 33. 19	11	−0. 19	[+53. 77]	54 34 34. 3	41. 6
γ Scorpii	14 57 0. 57	11	−0. 16	+53. 88	63 48 53. 8	41. 4
48 H. Cephei S. P.	15 5 53. 01	8	+0. 77	[+53. 95]	296 18	....
β Librae	15 10 26. 61	11	−0. 21	+54. 06	47 56 28. 1	43. 3
32 Librae	15 21 25. 29	8	−0. 19	+53. 97	55 17 44. 7	40. 8
41 Librae	15 31 57. 00	11	−0. 18	+54. 03	57 54 6. 8	41. 8

h
15. 252 . ...*dt* ....+53. 985 s
Hourly rate 0. 0000
Adopted Equator Point ....38° 56′ 41.″ 79

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
12 17	29. 495	70. 2	69. 8
13 4	29. 505	67. 4	67. 2
13 42	29. 515	65. 9	65. 3
14 3	29. 515	65. 1	65. 2
15 0	29. 515	64. 5	65. 2
15 34	29. 525	63. 9	64. 4

Notes.

1 to 76. Right ascensions rejected because investigation indicates sudden change in clock correction in early part of zone.

126 to 132. Microscope VI at 9 revolutions, and microscope VIII at 8 revolutions.

REDUCTION TABLE FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0. 196	12 30	......	+17. 153	+17. 178	+17. 206	+17. 233	+17. 259
53	0. 193	13 0	+17. 187	17. 229	17. 272	17. 318	17. 360	17. 405
54	0. 190	13 30	17. 248	17. 308	17. 368	17. 428	17. 489	17. 549
55	0. 187	14 0	17. 312	17. 387	17. 461	17. 537	17. 613	17. 689
56	0. 184	14 30	+17. 375	17. 463	17. 554	17. 642	17. 732	17. 823
57	−0. 181	15 0	......	17. 538	17. 640	17. 742	17. 844	17. 947
		15 30	......	+17. 609	+17. 722	+17. 833	+17. 947	+18. 062

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894.0						*R*					
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
12 30	.....	−15. 22	−15. 52	−15. 82	−16. 12	−16. 42	71. 68	74. 32	77. 07	79. 98	83. 02	86. 24
13 0	−15. 55	15. 84	16. 12	16. 40	16. 68	16. 95	71. 93	74. 58	77. 34	80. 26	83. 31	86. 54
13 30	15. 96	16. 21	16. 48	16. 73	16. 98	17. 23	72. 18	74. 83	77. 61	80. 54	83. 60	86. 84
14 0	16. 15	16. 38	16. 60	16. 83	17. 05	17. 27	72. 29	74. 95	77. 73	80. 67	83. 73	86. 98
14 30	−16. 09	16. 29	16. 48	16. 67	16. 86	17. 04	72. 29	74. 95	77. 73	80. 67	83. 73	86. 98
15 0	.....	15. 95	16. 11	16. 26	16. 41	16. 56	72. 29	74. 95	77. 73	80. 67	83. 73	86. 98
15 30	.....	−15. 39	−15. 51	−15. 62	−15. 74	15. 85	72. 39	75. 06	77. 84	80. 78	83. 85	87. 10

1894 JUNE 8. ZONE 52. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	....	14. 1	15. 9	17. 8	19. 8	22. 0	a	57 47. 57	55	30	9. 6	28. 1	I	45. 250	12 59 1. 31	−16 42 3. 55	−16 3592
2	.	8. 8	10. 8	13. 0	15. 1	17. 4	c	59 13. 03	56	30	10. 0	29. 7	V	49. 170	13 0 26. 82	17 43 25. 27	17 3768
3	.	6. 5	8. 5	10. 8	13. 0	15. 1	(c)	12 10. 79	55	24	10. 0	28. 9	I	46. 550	13 13 24. 57	16 36 26. 41	16 3635
4		6. 1	8. 5	10. 5	12. 2	14. 3	e	13 40. 74	54	30	10. 0	28. 6	VII	44. 940	13 14 54. 48	15 41 57. 83	15 3643
5	..	6. 6	8. 2	12. 5	14. 6	16. 8	b_2 c_3	16 16. 80	56	32	10. 0	29. 6	III A	42. 120	13 17 30. 66	17 46 19. 86	17 3836
6		45. 2	47. 6	49. 3	51. 2	53. 2	e	16 19. 41	56	32	"	"	VII B	44. 360	13 17 33. 26	17 40 39. 96	17 3837
7	...	39. 8	42. 1	44. 0	45. 9	48. 0	e	17 14. 07	56	32	"	"	V	44. 290	13 18 27. 93	17 43 49. 54	17 3841
8	9. 1	51. 0	52. 5	56. 7	58. 9	1. 1	b_2 c_3	19 1. 10	56	52	10. 0	29. 2	III	44. 660	13 20 14. 98	18 3 55. 40	17 3844
9	6. 0	30. 9	32. 9	35. 0	39. 5	40. 9	c_3 d_2	19 30. 83	55	8	10. 0	28. 3	V	46. 350	13 20 44. 61	16 20 23. 74	16 3658
10	9. 2	24. 8	27. 2	29. 3	31. 4	33. 8	c	20 29. 31	56	58	10. 0	29. 7	V	45. 560	13 21 43. 20	−18 10 14. 45	−17 3849
11	5. 0	18. 8	21. 1	23. 0	24. 9	26. 8	(e)	20 53. 37	54	16	10. 0	28. 1	VII	43. 010	13 22 7. 11	−15 27 18. 95	−15 3668
12	9. 3	52. 1	54. 2	56. 4	58. 3	0. 5	a	25 26. 00	55	50	10. 0	28. 1	I	49. 205	13 26 39. 85	17 3 15. 33	16 3682
13	9. 1	31. 6	33. 4	37. 6	39. 6	41. 9	b_2 c_3	25 41. 85	55	16	10. 0	28. 2	III	43. 530	13 26 55. 66	16 27 27. 55	16 3684
14	9. 0	8. 9	11. 3	13. 3	17. 7	19. 3	c_3 d_2	26 9. 07	56	2	10. 0	29. 0	V	46. 840	13 27 22. 93	17 14 34. 66	17 3881
15	9. 6	12. 8	14. 5	16. 6	18. 7	20. 7	a	28 46. 21	54	48	10. 0	27. 6	I	48. 845	13 30 0. 01	16 1 4. 72	15 3700
16	8. 6	25. 4	27. 2	29. 1	31. 2	33. 3	a	32 58. 66	53	54	10. 0	28. 0	I	47. 000	13 34 12. 40	15 6 26. 57	14 3768
17	9. 1	30. 5	32. 2	34. 1	36. 0	38. 3	a	35 3. 72	54	28	10. 0	28. 6	I	46. 135	13 36 17. 50	15 40 11. 47	15 3720
18	9. 4	44. 2	46. 2	47. 8	49. 8	52. 0	a	36 17. 51	54	28	"	"	I A	46. 970	13 37 31. 30	15 43 40. 30	15 3725
19	7. 0	18. 9	20. 8	22. 8	24. 7	26. 9	a	37 52. 32	54	28	"	"	I	47. 360	13 39 6. 11	15 40 34. 16	15 3731
20	9. 8	11. 2	13. 4	15. 5	17. 8	20. 0	c	40 15. 59	56	22	10. 0	29. 0	V	44. 140	[13 41 29. 52]	−17 33 41. 28	−17 3929

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
21	8.0	20.8	22.7	25.0	29.4	30.9	c_3 d_2	41 20.77	54 22 10.0 28.2	V 45.250	13 42 34.57	−15 33 56.20	−15 3739
22	9.1	36.5	38.0	42.2	44.5	46.7	b_2 c_3	42 46.60	54 56 10.0 27.2	III 48.820	13 44 0.44	16 9 3.23	15 3742
23	9.3	47.1	49.5	51.4	53.1	55.0	e	43 21.82	53 12 10.0 27.0	VII 48.440	13 44 35.55	14 24 54.36	14 3811
24	8.9	34.0	35.8	37.4	39.7	41.8	a	45 7.14	53 46 10.0 28.3	III 47.060	13 46 20.89	14 58 26.69	14 3815
25	8.9	......	26.9	28.6	30.7	32.8	a	45 58.30	54 28 10.0 28.6	III 46.930	13 47 12.11	15 40 25.98	15 3755
26	9.1	39.3	41.2	43.1	45.0	47.3	a	47 12.62	54 6 10.0 28.1	I 44.850	13 48 26.40	15 17 43.08	15 3762
27	7.7	7.8	9.7	11.6	13.7	15.8	a	47 41.37	55 30 10.0 28.0	III 43.120	13 48 55.25	16 41 15.59	16 3760
28	9.3	38.0	39.7	41.8	43.7	46.0	a	49 11.15	53 6 10.0 27.8	I 46.480	13 50 24.87	14 18 10.95	14 3830
29	9.3	33.5	35.2	37.2	39.2	41.5	a	51 7.00	55 38 10.0 28.6	I 48.690	13 52 20.91	16 50 59.66	16 3771
30	9.4	17.6	19.5	21.3	23.3	25.5	a	52 51.20	56 10 10.0 29.2	I 42.840	13 54 5.15	−17 21 9.70	−17 3972
31	9.5	57.4	59.6	1.7	4.0	6.0	c	53 1.75	53 40 10.0 28.4	V 46.020	13 54 15.52	−14 52 6.42	−14 3845
32	8.9	23.9	26.0	28.1	30.5	32.5	c	57 28.21	53 48 10.0 28.4	V 46.640	13 58 42.00	15 0 17.44	14 3861
33	9.0	21.3	23.2	25.1	27.3	29.4	a	58 55.05	56 24 10.0 29.2	III 43.960	14 0 9.03	17 35 32.03	17 4002
34	9.1	51.0	53.3	55.5	57.6	59.7	c	58 55.43	56 24 " "	V 45.520	14 0 9.41	17 36 3.33	17 4003
35	9.4	......	20.6	22.7	24.6	26.9	a	5 52.21	54 12 10.0 27.8	I 45.775	14 7 6.05	15 23 56.10	15 3824
36	8.9	12.8	14.8	17.1	19.3	21.5	c	6 17.11	54 22 10.2 29.4	III 48.510	14 7 30.96	15 34 51.20	15 3826
37	9.3	41.3	43.3	45.5	47.7	49.9	c	7 45.55	56 44 10.0 29.3	III B 44.530	[14 8 59.59]	17 52 29.26	17 4038
38	9.0	1.4	3.4	5.7	9.8	11.5	c_3 d_2	8 1.31	56 44 " "	VI A 40.890	14 9 15.36	17 57 47.53	17 4039
39	8.5	8.5	10.7	12.8	17.0	18.6	c_3 d_2	9 8.53	54 26 10.0 27.8	V 42.550	14 10 22.39	15 36 57.87	15 3837
40	9.4	58.3	0.4	2.6	4.9	7.3	c	10 2.71	54 26 " "	V B 47.260	14 11 16.57	−15 35 14.88	−15 3838
41	9.2	2.7	4.5	6.8	9.1	11.2	c	11 6.87	54 26 " "	V B 42.360	14 12 20.72	−15 33 41.35	−15 3842
42	9.5	22.5	24.8	27.0	31.1	32.8	c_3 d_2	12 22.65	54 36 10.0 27.8	VI 43.940	[14 13 36.52]	15 47 24.64	15 3844
43	9.4	7.1	9.5	11.5	13.2	15.2	e	14 41.60	55 20 10.0 28.3	VII 44.780	14 15 55.54	16 31 42.96	16 3847
44	9.5	5.8	7.8	10.0	14.2	15.8	c_3 d_2	17 5.73	54 24 10.0 28.5	VI B 40.110	14 18 19.60	15 30 57.80	15 3861
45	7.5	40.1	42.5	44.3	46.3	48.3	e	17 14.73	54 24 " "	VII A 44.720	14 18 28.61	15 38 51.47	15 3862
46	8.9	9.0	10.8	12.7	14.7	16.9	a	20 42.27	54 10 10.0 27.7	I 45.690	14 21 56.13	15 21 50.18	15 3875
47	9.4	24.5	26.5	28.8	30.9	33.0	c	21 28.75	54 28 10.0 28.5	V 45.000	14 22 42.64	15 39 41.45	15 3877
48	8.7	26.0	28.0	30.2	32.5	34.6	c	22 30.27	53 44 10.0 28.3	V 48.310	14 23 44.10	14 56 42.10	14 3964
49	8.6	1.7	3.5	5.4	7.3	9.7	a	24 34.95	54 0 10.0 28.0	III 43.115	14 25 48.80	15 11 1.53	14 3970
50	9.5	6.0	8.0	10.0	11.9	14.1	a	25 39.40	53 46 10.0 28.6	III 44.920	14 26 53.23	−14 57 35.25	−14 3973
51	8.0	44.6	46.5	48.4	50.5	52.5	a	27 18.10	55 10 10.0 29.0	I 48.550	14 28 32.06	−16 22 46.02	−16 3892
52	9.4	22.0	23.9	25.8	27.8	29.9	a	28 55.63	56 4 10.0 28.7	III 47.110	14 30 9.67	17 16 22.35	17 4119
53	9.3	......	48.2	50.1	52.0	54.4	a	30 20.06	56 46 10.0 29.2	III B 42.660	14 31 34.17	17 53 47.26	17 4126
54	8.3	49.5	51.3	53.3	55.3	57.4	a	33 22.87	54 34 10.0 27.8	I 46.850	14 34 36.79	15 46 9.51	15 3922
55	7.9	12.9	14.9	16.8	18.8	20.8	a	33 46.36	54 34 " "	I 48.260	14 35 0.28	15 46 36.22	15 3924
56	9.1	26.1	28.0	30.0	31.9	34.2	a	34 59.61	54 58 10.0 28.6	I 47.720	14 36 13.57	16 10 27.06	15 3930
57	9.0	6.6	8.6	10.5	12.6	14.7	a	35 40.17	54 58 " "	I 47.080	14 36 54.14	16 10 14.66	15 3935
58	9.6	4.4	6.0	10.1	12.2	14.5	b_2 c_3	36 14.46	54 58 " "	V A 47.640	14 37 28.43	16 13 41.57	16 3923
59	8.5	37.6	39.6	41.8	44.0	46.2	c	37 41.85	55 14 10.0 28.6	III 49.510	14 38 55.84	16 27 2.87	16 3929
60	7.9	30.0	31.8	33.8	36.0	38.1	a	39 3.69	56 0 10.0 28.7	III A 50.310	14 40 17.76	−17 16 33.03	−17 4172
61	9.2	19.1	21.0	23.0	25.0	27.0	a	39 52.74	56 0 " "	III B 39.750	14 41 6.80	−17 6 46.30	−16 3938
62	8.0	9.1	11.0	13.0	14.9	17.1	a	41 42.71	55 44 10.0 28.8	I 44.025	14 42 56.76	16 55 16.87	16 3939
63	9.3	42.6	44.4	46.4	48.5	50.5	a	43 15.98	54 26 10.5 29.4	I A 46.480	14 44 29.91	15 41 13.20	15 3963
64	6.0	21.9	23.8	25.8	27.7	30.0	a	43 55.33	54 26 " "	I B 46.810	14 45 9.25	15 34 53.80	15 3965
65	3.0	56.6	58.3	2.6	4.7	6.7	b_2 c_3	44 6.79	54 26 " "	III 45.150	14 45 20.72	15 37 36.21	15 3966
66	8.9	17.2	19.6	21.3	23.3	25.3	e	45 51.72	54 52 10.0 27.4	VII B(41).330	14 47 5.69	15 59 13.48	15 3976
67	9.2	49.0	51.2	53.5	55.7	57.9	c	46 53.47	54 52 " "	V A 43.070	14 48 7.45	16 6 10.25	15 3978
68	......	8.4	10.6	12.5	14.5	16.6	e	47 42.90	54 52 " "	VII B 40.940	14 48 56.87	15 59 5.44	15 3981
69	9.0	45.3	47.3	49.1	51.1	53.3	a	50 18.78	54 54 10.0 29.2	III 48.660	14 51 32.76	16 6 41.87	15 3990
70	9.3	46.0	48.0	50.1	52.4	54.5	c	50 50.21	54 54 " "	V B 39.185	14 52 4.18	−16 0 30.60	−15 3993
71	9.4	51.1	53.6	55.3	57.3	59.3	e	51 25.69	54 54 " "	V 43.740	14 52 39.67	−16 5 9.49	−15 3997
72	9.3	27.1	29.6	31.5	33.2	35.2	■	52 1.68	54 54 " "	VII B 46.720	14 53 15.66	16 2 54.99	15 4001
73	9.5	27.2	29.2	31.6	33.6	35.9	□	53 31.51	54 54 " "	V A 44.020	14 54 45.50	16 8 27.09	15 4007
74	9.0	26.5	28.2	32.4	34.5	36.8	b_2 c_3	55 36.66	53 30 9.6 27.6	III A 44.820	14 56 50.52	14 44 35.30	14 4093
75	8.9	56.2	58.4	0.6	2.7	4.9	c	56 0.57	53 30 " "	V B 48.600	14 57 14.42	14 39 23.26	14 4096
76	9.6	4.2	5.8	10.0	12.0	14.4	b_2 c_3	57 14.26	53 30 " "	III 49.310	14 58 28.12	14 42 47.10	14 4101
77	......	36.6	38.6	41.0	44.9	46.6	c_3 d_2	57 36.57	53 30 " "	V B 48.950	14 58 50.43	14 39 29.38	14 4107
78	8.4	23.5	25.8	27.7	29.6	31.6	e	57 58.21	53 30 " "	VII B 39.150	14 59 12.06	14 36 24.08	14 4109
79	......	4.7	6.9	8.8	10.9	12.6	e	0 39.40	53 4 10.0 27.8	VII A 41.765	15 1 53.22	14 17 37.39	14 4121
80	9.3	56.0	58.4	0.5	2.3	4.3	e	3 30.68	54 44 10.0 28.9	VII A 44.970	15 4 44.67	−15 58 42.37	−15 4041
81	......	44.4	46.4	48.4	50.2	52.3	(e)	4 18.73	54 44	....	15 5 32.72	−15 53 57	−15 4044
82	9.3	38.4	40.4	42.3	44.3	46.4	a	7 12.05	55 52 10.2 29.4	III B 38.205	15 8 26.16	16 58 7.66	16 4034
83	9.0	17.9	20.2	22.1	26.5	28.2	c_3 d_2'	7 17.95	55 52 " "	VII A 50.780	15 8 32.08	17 8 35.25	16 4035
84	8.9	58.6	0.4	2.3	4.2	6.6	a	12 32.27	56 42 10.0 29.2	I (A) 41.140	15 13 46.53	17 55 27.62	17 4300
85	9.6	34.4	36.4	38.9	43.0	44.6	c_3 d_2	12 34.41	56 42 " "	VI A 49.120	15 13 48.64	17 58 3.43	17 4301
86	9.5	41.8	44.0	45.9	48.0	50.0	e	13 16.03	56 42 " "	VII B 46.700	15 14 30.25	17 50 52.40	17 4307
87	7.5	24.9	27.2	29.2	31.0	33.0	e	13 59.16	56 42 " "	VII B 36.900	15 15 13.38	17 47 45.57	17 4312
88	......	15.0	17.2	19.4	21.5	23.8	c	15 19.39	56 42 " "	V A 35.340	15 16 33.62	17 53 39.42	17 4317
89	9.1	16.9	18.6	22.8	24.9	27.2	b_2 c_3	17 27.09	54 34 10.0 28.7	III 42.215	15 18 41.08	15 44 28.35	15 4098
90	9.4	25.6	27.1	29.2	31.1	33.3	a	19 58.82	54 54 10.0 28.5	III 44.540	15 21 12.86	−16 5 12.48	−15 4105
91	8.8	35.3	36.8	41.0	43.2	45.6	b_2 c_3	20 45.40	54 54 " "	III A 44.590	15 21 59.44	−16 8 26.25	−15 4112
92	8.8	13.3	14.8	19.0	21.3	23.3	b_2 c_3	23 23.34	54 10 10.0 27.4	III 43.285	15 24 37.30	15 20 44.72	15 4130
93	8.3	9.9	12.0	14.1	16.1	18.3	c	24 14.09	54 18 10.7 29.3	V 47.710	15 25 28.07	−15 30 11.92	−15 4132

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
94	9.5	53.3	55.4	57.4	59.2	1.4	e	24 27.80	54 18 10.7 29.3	VII B 42.775	15 25 41.78	−15 25 26.90	−15 4133
95	6.0	27.5	29.9	31.8	33.6	35.6	e	26 1.98	55 24 10.0 28.5	VII(B)40.730	15 27 16.08	16 30 49.71	16 4110
96	8.8	29.5	31.7	33.5	35.5	37.4	(e)	27 3.79	55 24 " "	V A 47.500	15 28 17.91	16 39 22.20	16 4112
97	9.2	32.8	35.0	37.1	39.4	41.6	c	28 37.19	56 2 10.0 28.8	V (48).015	15 29 51.38	17 14 20.44	17 4372
98	9.3	11.8	13.5	15.5	17.6	19.6	a	30 44.93	53 12 10.0 28.6	I 48.640	15 31 58.79	14 24 19.98	14 4245
99	8.6	1.3	3.0	7.3	9.1	11.4	b_2 c_3	31 11.39	53 0 10.0 28.2	III 47.690	15 32 25.23	14 12 2.80	14 4247
100	7.9	30.5	32.0	36.3	38.5	40.7	b_2 c_3	31 40.57	53 0 " "	III 45.030	15 32 54.41	−14 11 12.00	−14 4250
101	9.5	35.6	37.7	39.5	41.5	43.6	a	33 8.98	53 46 10.0 28.7	I 43.970	15 34 22.91	−14 56 51.73	−14 4255
102	9.3	39.0	40.8	42.8	44.7	47.0	a	34 12.20	53 18 10.0 29.0	I 47.740	15 35 26.08	14 30 1.98	14 4260
103	9.0	44.7	46.8	49.0	51.2	53.3	c	34 49.01	54 2 10.0 28.1	V 48.145	15 36 2.98	15 14 14.41	15 4161
104	8.9	6.0	8.1	10.5	12.7	14.9	c	35 10.45	54 2 " "	V 49.720	15 36 24.42	15 14 44.24	15 4163
105	7.0	24.3	25.7	30.1	32.2	34.6	b_2 c_3	36 34.36	53 32 10.0 28.2	III 45.530	15 37 48.27	14 43 20.99	14 4266
106	6.0	8.5	10.7	12.9	15.0	17.2	c	37 12.87	54 14 10.0 27.9	V B 42.580	15 38 26.86	15 21 15.60	15 4171
107	9.3	3.0	4.3	8.8	10.8	13.0	b_2 c_3	38 12.98	54 14 " "	III A 42.660	15 39 26.98	15 27 40.58	15 4176
108	9.0	57.5	59.1	1.3	3.2	5.5	a	39 30.85	54 40 10.0 28.7	III 43.995	15 40 44.90	15 50 53.97	15 4182
109	9.6	50.7	52.5	54.4	56.3	58.7	a	40 24.05	54 40 " "	III 46.985	15 41 38.10	15 51 50.53	15 4186
110	9.3	6.3	8.0	12.0	14.2	16.5	b_2 c_3	41 16.40	54 20 10.0 27.6	III A 43.800	15 42 30.42	−15 34 1.18	−15 4191
111	9.5	38.2	40.1	42.1	44.5	46.8	c	41 42.35	54 20 " "	V B 41.380	15 42 56.36	−15 26 51.09	−15 4193
112	9.4	53.8	55.5	59.6	1.8	3.9	b_2 c_3	43 3.93	54 28 10.0 27.7	III 47.480	15 44 17.95	15 39 57.84	15 4197
113	9.4	46.1	47.6	51.8	53.9	56.2	b_2 c_3	43 56.13	54 28 " "	III 50.960	15 45 10.16	15 41 3.72	15 4200
114	9.6	42.3	44.2	48.5	50.8	52.8	b_2 c_3	44 52.73	54 28 " "	V B 48.400	15 46 6.75	15 37 3.84	15 4203
115	7.0	23.9	26.0	28.1	32.4	34.0	c_3 d_2	49 23.92	52 54 10.0 28.0	V 48.830	15 50 37.77	14 6 18.46	13 4290
116	9.1	7.4	9.5	11.6	13.7	15.9	c	50 11.63	52 54 " "	V 46.150	15 51 25.48	14 5 27.14	13 4296
117	9.6	58.5	0.8	2.8	5.1	6.9	c	51 2.83	52 54 " "	V B 45.840	15 52 16.68	14 2 8.49	13 4300
118	9.1	42.9	45.2	47.0	49.0	50.9	e	51 17.63	52 54 " "	VII A 50.600	15 52 31.49	14 10 5.70	14 4321
119	9.4	53.3	55.5	57.6	59.3	1.1	e	54 27.83	54 6 10.0 28.1	VII A 43.220	15 55 41.84	15 19 47.20	15 4232
120	8.9	33.8	35.9	38.0	40.2	42.5	c	56 38.09	54 56 10.0 28.8	V 46.175	15 57 52.19	−16 7 30.94	−15 4240

Reduction Elements. Zone 52.

1894.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
June 8.3....	−0.012	−0.301	−0.304	+0.007	−0.266	−0.304
8.5....	+0.026	−0.230				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		β Corvi		Mayer 522		ψ Virginis		53 Virginis		β Librae		32 Librae	
CIRCLE READING.		61 38 4.60		44 34 4.30		47 48 4.30		54 28 4.30		47 50 5.10		55 10 4.15	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	45.700	5 46.54	43.820	5 10.49	45.100	5 34.46	43.720	5 8.40	44.120	5 16.11		6 16.00
II	Red. to Mer......	.700	1.57	.810	1.74	.050	1.71	.660	1.65	.085	1.71		1.65
VI	Inclination	.515		.610		44.875		.525		43.910		47.160	2.04
VII	Refraction.......	.495	1 44.1	.585	55.6	.840	1 2.3	.480	1 19.1	.895	1 3.0	.140	1 22.0

		δ Scorpii		β Scorpii pr.		11 Scorpii	
CIRCLE READING.		61 8 4.05		58 20 4.10		51 18 3.75	
		r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......		6 16.34	47.065	6 12.54	44.005	5 14.08
II	Red. to Mer.....		1.58	.045	1.61	43.975	1.69
VI	Inclination	47.190	2.04	46.910		.820	
VII	Refraction..	.145	1 43.5	.855	1 32.6	.780	1 11.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
β Corvi...	12 27 54.17	11	−0.42	+56.77	61 45 36.8	41.1
Mayer 522 ...	12 41 9.85	11	−0.40	+56.90	44 40 12.1	41.6
ψ Virginis	12 47 55.64	11	−0.40	+56.81	47 54 42.8	41.3
43 H. Cephei s. p...	12 53 9.92	8	−1.41	[+56.82]	304 38	....
53 Virginis	13 5 30.41	11	−0.41	+56.76	54 34 33.5	40.7
β Librae........	15 10 24.15	11	−0.40	+56.73	47 56 25.9	41.3
32 Librae...........	15 21 22.92	11	−0.41	+56.58	55 17 45.8	42.0
δ Scorpii	15 53 10.26	4	−0.42	+56.66	61 16 7.5	40.7
β Scorpii pr.........	15 58 22.67	11	−0.42	+56.70	58 27 50.8	41.4
11 Scorpii	16 0 49.42	11	−0.41	+56.71	51 24 30.8	40.3

12.760^h............*dt* .... +56.810^s

Hourly rate .... − 0.0459

Adopted Equator Point ....38° 56′ 41.″16

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
12 26	29.915	66.8	66.3
13 8	29.925	64.6	63.8
14 3	29.935	62.9	61.3
15 1	29.945	61.8	60.1
16 3	29.945	60.5	59.0

Notes.

20. Clouds.
102. Close double; equal components, same declination.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	A = α to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.407	12 30	......	......	......	+17.230	+17.257	+17.284
53	0.408	13 0	......	......	+17.286	17.331	17.376	17.419
54	0.410	13 30	......	+17.312	17.370	17.432	17.491	17.553
55	0.411	14 0	......	17.377	17.453	17.528	17.603	17.680
56	0.412	14 30	......	17.441	17.529	17.619	17.708	17.799
57	−0.413	15 0	......	17.499	17.601	17.703	17.804	17.907
		15 30	+17.443	17.554	17.667	17.777	+17.890	+18.005
		16 0	+17.484	+17.604	+17.723	+17.845	......	......

APPARENT RIGHT ASCENSION.	D = Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
12 30	.....	.....	.....	−15.90	−16.21	−16.52	.....	.....	.....	.....	.....	.....
13 0	.....	.....	−16.22	16.52	16.82	17.12	73.42	74.75	77.52	80.41	83.46	86.66
13 30	.....	−16.33	16.61	16.89	17.16	17.44	73.64	74.97	77.75	80.65	83.71	86.92
14 0	.....	16.49	16.74	16.99	17.24	17.49	73.84	75.18	77.96	80.87	83.95	87.16
14 30	.....	16.41	16.62	16.84	17.06	17.28	73.98	75.32	78.11	81.02	84.10	87.32
15 0	.....	16.05	16.24	16.42	16.60	16.79	74.08	75.42	78.22	81.13	84.22	87.44
15 30	−15.32	15.47	15.60	15.75	−15.90	−16.05	74.15	75.49	78.29	81.21	84.29	87.52
16 0	−14.52	−14.63	−14.74	−14.85	.....	.....	74.23	75.58	78.35	81.30	84.39	87.62

1894 JUNE 14. ZONE 53. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	......	30.0	31.8	33.8	35.8	37.9	a	14 3.16	53 8 10.0 27.5	III B	39.330	13 15 20.21	−14 14 50.00	−14 3698
2	......	59.8	1.6	3.6	5.5	7.7	a	16 33.03	53 42 10.0 27.2	I	43.940	13 17 50.12	14 53 29.06	14 3708
3	......	33.9	35.9	38.0	40.0	42.4	c	16 38.05	53 12 10.0 27.3	V	45.673	13 17 55.11	14 24 4.27	14 3709[1]
4	......	3.8	6.0	8.0	9.7	11.8	e	16 38.47	53 12 " "	VII	45.670	13 17 55.53	14 24 5.68	14 3709[2]
5	8.4	1.8	3.8	6.0	8.2	10.4	c	35 6.05	55 50 10.0 27.9	V	47.900	13 36 23.31	17 2 50.22	16 3725
6	8.8	32.8	34.6	36.5	38.4	40.8	a	35 6.21	55 6 10.0 27.7	I	45.840	13 36 23.42	16 18 5.41	16 3724
7	8.9	15.6	17.5	19.4	21.6	23.7	a	37 49.16	55 8 10.0 27.7	I	49.210	13 39 6.38	16 21 9.05	16 3736
8	9.2	50.4	52.2	54.0	56.0	58.4	(a)	38 23.99	56 22 10.0 28.0	III	49.290	13 39 41.30	17 35 15.88	17 3920
9	8.6	36.0	38.0	40.3	42.4	44.6	c	38 40.27	55 32 10.0 28.0	V	47.045	13 39 57.52	16 44 32.36	16 3738
10	8.6	7.5	9.4	11.5	13.4	15.7	a	40 41.33	56 36 10.0 28.4	I	47.180	13 41 58.66	−17 48 34.27	−17 3931
11	9.1	57.5	59.6	1.8	3.9	6.0	c	41 1.77	55 52 10.0 27.8	III	48.280	13 42 19.05	−17 4 54.56	−16 3746
12	9.2	39.2	41.0	43.2	45.1	47.3	a	43 12.92	56 8 10.0 28.0	I	46.885	13 44 30.22	17 20 26.56	17 3938
13	9.1	16.0	18.3	20.5	22.7	24.8	c	43 20.47	55 20 10.0 28.1	III	45.100	13 44 37.72	16 31 52.17	16 3751
14	8.9	56.0	58.0	59.9	2.0	4.0	a	47 29.33	53 26 10.0 27.5	I	46.240	13 48 46.46	14 38 5.83	14 3825
15	7.8	41.7	43.8	46.0	48.2	50.4	c	47 46.03	56 16 10.0 27.6	III	46.260	13 49 3.36	17 28 15.40	17 3958
16	9.0	59.9	1.9	3.8	5.8	8.0	a	57 33.36	54 22 10.0 27.4	I	45.225	13 58 50.58	15 33 46.37	15 3795
17	8.1	52.2	54.0	55.9	57.9	0.2	a	58 25.52	54 22 " "	I	41.870	13 59 42.74	15 32 42.29	15 3804
18	9.1	22.5	24.2	26.2	28.2	30.4	a	58 56.14	56 38 10.0 27.6	I	45.935	14 0 13.53	17 50 5.95	17 4005
19	9.0	56.4	58.2	0.1	2.3	4.4	a	59 30.01	56 6 10.0 28.2	III B	38.880	14 0 47.36	17 12 39.77	16 3799
20	9.1	......	30.5	32.5	34.3	36.5	a	0 2.25	56 6 " "	III A	46.845	14 1 19.61	−17 21 36.67	−17 4008
21	......	33.4	35.0	37.0	39.0	41.2	a	4 6.44	53 8 10.0 27.5	III	45.380	14 5 23.57	−14 19 46.32	−14 3891
22	9.2	33.8	35.6	37.4	39.5	41.6	a	6 7.17	55 6 10.0 27.4	I	46.040	14 7 24.46	16 18 1.63	16 3827
23	8.0	51.4	53.1	55.0	57.0	59.4	a	7 24.88	55 48 10.0 27.2	I	45.110	14 8 42.23	16 59 45.41	16 3829
24	6.0	2.3	4.0	6.0	8.2	10.5	a	8 36.02	56 32 10.0 27.4	I	45.950	14 9 53.44	17 44 3.29	17 4046
25	8.9	55.9	57.5	1.7	3.7	5.9	b_2 c_3	9 5.92	53 26 10.0 27.0	III	48.165	14 10 23.09	14 38 38.49	14 3910
26	9.1	40.0	42.0	43.9	45.9	48.0	a	10 13.50	54 46 10.0 27.1	III	47.550	14 11 30.78	15 58 30.01	15 3839
27	9.3	53.5	55.2	57.3	59.2	1.2	a	12 26.84	54 54 10.0 27.4	I	48.340	14 13 44.14	16 6 43.12	15 3847
28	7.0	32.3	34.3	36.6	38.9	41.0	c	12 36.63	56 52 10.0 28.0	III	44.890	14 13 54.08	18 3 45.15	17 4065
29	9.5	31.0	33.2	35.3	37.6	39.6	c	13 35.35	53 44 10.0 27.5	V	44.710	14 14 52.55	14 55 34.12	14 3926
30	9.3	16.0	17.9	19.8	21.8	24.0	a	15 49.34	54 6 10.0 27.4	I	43.720	14 17 6.58	−15 17 12.12	−15 3859
31	9.1	33.7	35.4	37.3	39.5	41.5	a	17 6.77	53 0 10.0 27.2	I	44.855	14 18 23.92	−14 11 30.46	−13 3887
32	7.8	20.7	22.5	24.4	26.4	28.6	a	17 53.82	53 0 " "	I A	47.655	14 19 10.97	14 15 36.73	14 3949
33	8.7	49.6	51.7	53.7	55.6	57.6	a	18 22.94	53 0 " "	I A	46.750	14 19 40.09	−14 15 19.37	−14 3951

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
34	7.9	4.5	6.2	8.0	10.0	12.4	a	20 37.54	53 12 10.0 27.0	I 44.070	14 21 54.71	−14 23 14.91	−14 3959
35	9.1	5.7	7.6	9.5	11.4	13.8	a	22 39.43	56 36 10.0 28.1	I 47.410	14 23 56.90	17 48 27.69	17 4099
36	9.4	22.7	24.6	26.5	28.5	30.6	a	22 56.37	56 22 10.0 28.2	III 44.650	14 24 13.82	17 33 36.25	17 4102
37	6.8	24.0	26.0	28.2	30.5	32.6	c	23 28.27	53 36 10.0 26.8	III 47.340	14 24 45.48	14 48 19.01	14 3968
38	9.4	38.8	41.0	43.1	45.4	47.6	c	24 43.19	55 22 10.0 27.3	III 46.510	14 26 0.56	16 34 8.11	16 3885
39	8.6	27.0	29.0	31.3	33.4	35.7	c	25 31.25	56 14 10.0 28.0	V 46.915	14 26 48.70	17 26 19.75	17 4110
40	9.2	48.0	50.0	51.9	54.0	56.2	a	27 21.74	55 56 10.0 28.0	I 44.300	14 28 39.16	−17 7 25.09	−16 3894
41	9.2	33.9	35.8	37.7	39.8	41.9	a	28 7.14	53 10 10.0 27.9	I 46.220	14 29 24.32	−14 21 53.94	−14 3984
42	8.7	35.1	36.9	38.9	40.9	43.0	a	33 8.66	55 48 10.0 27.4	I 49.955	14 34 26.09	17 1 10.27	16 3914
43	8.5	10.3	12.2	14.6	16.6	18.8	c	34 14.51	54 14 10.0 27.7	V 47.640	14 35 31.80	15 26 25.13	15 3927
44	8.7	57.9	59.7	2.0	6.2	8.0	c_3 d_2	34 57.74	55 38 10.0 28.0	V 49.460	14 36 15.16	16 51 3.56	16 3917
45	9.1	28.0	30.0	32.3	34.6	36.8	c	35 32.35	55 38 " "	V A 46.110	14 36 49.78	16 53 12.59	16 3919
46	9.2	9.2	11.3	13.5	15.5	17.8	c	36 13.47	55 38 " "	III A 45.985	14 37 30.90	16 53 8.50	16 3924
47	8.4	22.5	24.4	26.3	28.2	30.5	a	38 56.23	56 44 10.0 28.1	I 43.460	14 40 13.75	17 55 7.91	17 4171
48	8.6	44.0	46.0	48.0	49.9	52.0	a	43 17.53	54 48 10.0 28.0	I 44.985	14 44 34.88	15 59 29.95	15 3964
49	8.4	5.5	7.1	9.3	11.2	13.5	a	43 39.22	57 0 10.0 28.5	III 49.200	14 44 56.78	18 12 58.53	18 3908
50	9.3	0.1	1.9	3.9	5.9	8.3	a	44 33.93	57 0 " "	III A 48.800	14 45 51.49	−18 16 3.74	−18 3915
51	8.0	33.9	36.0	38.3	40.3	42.4	c	44 38.19	57 0 " "	V B 37.710	14 45 55.74	−18 6 8.70	−17 4195
52	8.2	44.0	46.0	48.0	50.4	52.5	c	45 48.19	54 52 10.0 28.2	V B 41.530	14 47 5.55	15 59 14.69	15 3976
53	8.9	50.0	52.3	54.6	56.8	59.0	c	47 54.55	54 52 " "	III A 47.265	14 49 11.93	16 7 27.00	15 3983
54	8.5	2.5	4.3	8.2	10.5	12.6	$(b_2)c_3$	49 12.61	54 4 10.0 27.8	III 43.920	14 50 29.90	15 15 7.46	15 3986
55	9.3	42.8	44.4	48.6	50.7	52.8	(b_2c_3)	49 52.85	54 4 " "	V B 49.580	14 51 10.14	15 13 44.22	15 3988
56	9.4	28.4	30.8	32.7	34.6	36.5	e	51 3.04	54 22 10.0 28.4	VII 46.870	14 52 20.37	15 34 7.17	15 3996
57	8.6	58.7	0.7	2.9	5.2	7.2	c	52 2.95	53 50 10.0 28.6	V 47.080	14 53 20.23	15 2 8.08	14 4082
58	9.0	20.4	22.5	24.8	27.0	29.0	c	53 24.75	53 8 10.0 28.9	III 46.240	14 54 41.96	14 19 48.35	14 4085
59	8.3	31.5	33.8	35.8	37.5	39.6	e	54 6.21	53 26 10.0 27.8	V 46.170	14 55 23.45	14 37 48.62	14 4087
60	9.3	18.5	20.3	22.0	24.0	26.3	a	10 51.61	53 40 10.0 28.8	I A 44.250	15 12 8.91	−14 54 17.00	−14 4167
61	9.2	34.6	36.4	38.4	40.5	42.6	a	11 7.88	53 40 " "	III B 44.445	15 12 25.17	−14 47 56.89	−14 4168
62	7.9	13.4	15.2	17.0	19.0	21.4	a	13 46.52	53 12 10.0 27.8	I 43.360	15 15 3.77	14 22 44.08	14 4180
63	8.9	36.0	38.0	40.0	41.9	44.0	a	14 9.48	54 24 10.0 28.0	III 48.060	15 15 26.85	15 36 18.64	15 4085
64	9.1	28.6	30.7	32.8	35.0	37.0	c	15 32.83	52 58 10.0 28.2	III 44.170	15 16 50.05	14 9 0.22	13 4139
65	9.0	......	12.6	14.5	16.3	18.1	e	15 44.78	54 34 10.0 28.5	VII B 42.900	15 17 2.17	15 41 30.97	15 4089
66	9.3	6.0	8.4	10.2	12.0	14.0	e	16 40.52	54 34 " "	V A 47.710	15 17 57.93	15 49 26.17	15 4096
67	9.1	50.9	53.3	55.3	57.0	59.0	e	17 25.71	53 8 10.0 28.7	V 47.370	15 18 42.96	14 20 2.75	14 4194
68	8.6	39.0	40.8	42.8	44.5	46.8	a	20 12.24	54 14 10.0 28.2	I 46.870	15 21 29.60	15 25 51.40	15 4107
69	7.8	16.6	18.4	20.6	22.4	24.6	a	20 49.87	53 30 10.0 27.9	III B 39.630	15 22 7.14	14 36 20.75	14 4208
70	9.3	34.0	36.0	38.0	40.0	42.0	a	22 7.38	53 30 " "	I A 50.490	15 23 24.67	−14 46 10.68	−14 4213
71	9.3	50.9	53.1	55.1	57.0	58.9	e	22 25.64	52 54 10.0 28.5	V 45.370	15 23 42.86	−14 5 22.10	−13 4174
72	6.5	40.0	42.1	44.4	46.6	48.8	c	23 44.39	55 4 10.0 28.0	III 47.145	15 25 1.85	16 15 59.31	16 4099
73	8.9	38.0	40.0	42.3	44.4	46.5	c	24 42.25	55 30 10.0 28.2	III 43.640	15 25 59.76	16 40 53.55	16 4104
74	9.1	11.5	13.3	15.2	17.3	19.5	a	25 44.80	54 6 10.0 28.4	III 42.470	15 27 2.15	15 16 27.10	15 4136
75	9.2	16.6	18.5	20.3	22.3	24.5	a	26 49.79	53 24 10.0 28.3	I 44.650	15 28 7.07	14 35 4.46	14 4229
76	9.0	14.1	15.9	20.3	22.3	24.5	b_2 c_3	27 24.43	54 52 10.0 28.2	III 43.020	15 28 41.87	16 2 38.93	15 4141
77	8.9	56.8	58.4	0.5	2.4	4.8	a	28 30.29	55 52 10.0 28.1	III 48.480	15 29 47.85	17 4 25.28	16 4116
78	8.7	5.5	7.4	9.4	11.3	13.5	a	29 39.07	55 30 10.0 0.0	I 43.820	15 30 56.59	16 40 54.18	16 4120
79	8.8	9.6	11.6	13.5	15.3	17.5	a	30 43.11	55 12 10.0 29.4	I 47.650	15 32 0.60	16 24 5.51	−16 4123
80	9.3	49.8	51.9	54.3	58.4	59.8	c_3 d_2	30 49.86	54 4 10.0 27.6	V A 49.630	15 32 7.23	−15 19 55.53	....
81	9.0	51.0	53.3	55.3	57.5	59.7	c	31 55.37	54 4 " "	VII B 41.970	15 33 12.72	15 11 5.33	−15 4152
82	9.3	19.6	21.4	23.5	25.5	27.9	a	33 53.08	54 28 10.0 27.8	III 48.730	15 35 10.49	15 40 23.79	15 4159
83	9.2	44.5	46.0	48.0	50.0	52.4	a	35 17.74	54 52 10.0 28.0	I 46.560	15 36 35.20	16 3 41.34	15 4164
84	7.0	18.0	19.9	21.7	23.8	26.0	a	35 51.38	54 30 10.0 28.2	III 46.170	15 37 8.80	15 41 34.59	15 4165
85	8.0	25.7	27.5	29.7	31.7	33.8	a	36 59.31	55 18 10.0 28.0	III A 47.185	15 38 16.83	16 33 8.74	16 4151
86	9.1	27.4	29.0	31.0	33.0	35.2	a	38 0.73	55 18 " "	I B 39.230	15 39 18.23	16 24 9.71	16 4154
87	7.9	19.0	20.9	23.0	24.8	27.0	a	38 52.58	55 26 10.0 28.1	I 48.220	15 40 10.11	16 38 13.19	16 4155
88	8.7	38.7	40.5	42.5	44.5	46.7	a	40 11.97	53 44 10.0 27.9	I 46.280	15 41 29.30	14 55 30.90	14 4277
89	8.9	39.8	41.6	43.5	45.4	47.8	a	41 13.21	55 6 10.0 28.0	I 45.770	15 42 30.71	16 17 24.63	16 4160
90	9.0	8.7	10.5	12.5	14.4	16.7	a	42 41.86	53 0 10.0 28.2	I A 44.400	15 43 59.12	−14 14 5.58	−14 4286
91	8.0	19.0	20.5	24.7	26.9	29.0	b_2 c_3	43 29.06	55 52 10.0 28.0	III 43.260	15 44 46.65	−17 2 39.99	−16 4164
92	9.0	1.0	3.0	5.5	7.6	9.8	c	44 5.39	55 30 10.0 28.6	V 47.020	15 45 22.94	16 41 52.18	16 4166
93	9.1	0.3	2.0	4.6	6.8	9.0	c	45 4.55	53 12 10.0 28.9	V B 45.780	15 46 21.82	14 20 9.60	14 4293
94	9.1	18.2	19.9	24.0	25.6	28.4	c_4 d_3	45 15.72	53 12 " "	VII 45.190	15 46 33.00	14 23 12.13	14 4294
95	7.9	19.3	21.5	23.7	25.8	27.9	c	46 23.65	53 12 " "	V A 40.810	15 47 40.93	14 24 59.80	14 4298
96	9.4	5.0	7.3	9.3	11.4	13.6	c	47 9.33	53 12 " "	III A 40.850	15 48 26.61	14 24 58.75	14 4300
97	9.3	21.0	22.6	27.0	29.0	31.3	b_2 c_3	48 31.17	53 38 10.0 28.3	III B 41.680	15 49 48.49	14 44 49.45	14 4309
98	9.0	42.1	44.1	46.4	48.2	50.6	c	48 46.29	53 38 " "	V B 39.450	15 50 3.61	14 44 8.45	14 4311
99	8.0	16.0	18.0	20.0	22.0	24.0	e	48 50.54	53 38 " "	VII A 43.570	15 50 7.88	14 51 53.53	14 4312
100	9.1	50.0	51.9	54.0	56.3	58.6	c	50 54.17	54 22 10.0 28.1	III B 45.740	15 52 11.59	−15 30 7.62	−15 4225
101	8.0	42.3	44.0	46.0	48.0	50.3	a	52 15.66	54 44 10.0 28.0	III 48.290	15 53 33.13	−15 56 8.93	−15 4228
102	9.4	45.3	47.2	49.3	51.3	53.4	a	53 18.83	54 44 " "	I B 47.440	15 54 36.29	15 52 38.24	15 4229
103	8.8	35.7	37.5	39.3	41.3	43.4	a	54 8.72	52 58 10.0 28.5	III 43.255	15 55 25.98	14 8 27.75	14 4329
104	9.4	7.0	8.8	10.7	12.6	14.8	a	55 40.21	54 0 10.0 28.2	III 46.580	15 56 57.60	15 11 33.02	15 4236
105	9.3	20.3	22.0	24.0	26.0	28.3	a	56 53.51	53 40 10.0 28.4	I 43.050	15 58 10.85	14 50 22.73	14 4339
106	9.3	2.6	4.5	6.4	8.5	10.6	a	57 35.79	52 52 10.0 28.1	III 43.010	15 58 53.03	−14 2 21.21	−13 4331

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
107	9.2	44.0	45.8	47.8	49.8	52.0	a	58 17.26	53 38 10.0 27.4	III	44.690	15 59 34.59	−14 48 54.59	−14 4343
108	8.6	5.3	7.2	9.0	11.0	13.4	a	59 38.45	52 52 10.0 27.6	I	42.980	16 0 55.70	14 2 17.74	13 4337
109	9.1	57.3	59.2	1.0	3.0	5.1	a	0 30.46	53 22 10.0 27.4	I B	43.625	16 1 47.76	14 29 18.61	14 4351
110	9.0	29.8	31.6	33.5	35.5	37.6	a	1 2.95	53 22 " "	I A	45.710	16 2 20.26	−14 36 23.53	−14 4356
111	9.4	30.1	32.0	34.0	35.9	38.0	a	2 3.28	52 54 10.0 28.5	I	44.670	16 3 20.53	−14 4 49.43	−13 4349
112	9.4	58.8	0.6	2.6	4.5	6.8	a	2 31.93	52 54 " "	I B	40.510	16 3 49.17	14 0 17.80	13 4351
113	8.9	30.8	32.5	34.4	36.5	38.5	a	4 3.82	52 56 10.0 29.1	I	46.200	16 5 21.08	14 7 18.08	14 4362
114	9.3	50.0	52.0	53.9	55.9	58.0	a	5 23.31	53 22 10.0 28.1	I	46.370	16 6 40.62	14 33 21.41	14 4364
115	9.1	24.5	26.5	28.6	30.8	33.0	c	5 28.69	53 22 " "	III	43.650	16 6 46.00	14 32 31.41	14 4365
116	9.5	16.5	18.3	20.3	22.3	24.3	a	6 49.89	54 56 10.0 27.9	III B	43.280	16 8 7.39	16 3 15.68	15 4271
117	9.0	59.6	1.4	3.8	6.0	8.0	c	7 3.77	54 56 " "	III A	40.590	16 8 21.28	16 8 49.83	16 4251
118	8.5	59.4	1.6	3.8	5.9	8.0	c	8 3.75	53 12 10.0 28.0	III	45.630	16 9 21.05	14 23 7.51	14 4379
119	6.5	51.0	53.3	55.3	57.6	59.8	c	8 55.41	53 24 10.0 27.6	III	48.170	16 10 12.73	14 35 55.83	14 4383
120	......	50.2	52.0	54.0	56.0	58.0	a	10 23.46	53 58 10.0 27.4	I B	42.220	16 11 40.84	−15 4 49.33	−14 4389
121	9.3	24.4	26.5	28.5	30.6	32.9	c	10 28.59	53 58 " "	III A	44.475	16 11 45.99	−15 11 59.35	−15 4291
122	6.7	30.9	32.8	34.9	36.7	38.8	a	12 4.17	53 26 10.0 27.6	I	47.770	16 13 21.50	14 37 45.16	14 4398
123	9.0	23.0	24.7	26.7	28.5	30.8	a	12 56.07	53 12 10.0 27.9	I	48.810	16 14 13.37	14 24 4.09	14 4401
124	9.3	27.0	28.7	30.9	32.7	35.0	a	14 0.63	56 16 10.0 29.0	I	46.200	16 15 18.30	17 27 23.25	17 4548
125	9.2	50.6	52.4	54.5	56.4	58.7	a	16 23.87	53 22 10.0 28.0	III	49.600	16 17 41.20	14 34 19.95	14 4410
126	9.1	25.5	27.7	29.7	34.0	35.6	c_3 d_2	16 25.54	53 22 " "	VI B	42.470	16 17 42.85	14 28 54.20	14 4411
127	9.1	43.5	45.2	47.3	49.1	51.4	a	18 16.84	54 44 10.0 28.4	III A	43.340	16 19 34.34	15 57 37.06	15 4320
128	9.2	25.5	27.2	31.3	33.3	35.5	b_2 c_3	18 35.57	54 44 " "	III B	43.900	16 19 53.06	15 51 22.15	15 4321
129	9.4	23.0	24.9	26.8	28.8	30.9	a	20 56.27	53 40 10.0 29.2	I	42.450	16 22 13.63	14 50 1.48	14 4425
130	9.0	36.9	38.6	40.7	42.6	44.7	a	22 10.03	53 14 10.0 29.3	I A	44.010	16 23 27.35	−14 27 42.76	−14 4428
131	9.1	10.0	11.7	13.7	15.8	17.9	a	22 43.14	53 14 " "	I B	46.000	16 24 0.45	−14 21 54.93	−14 4431
132	6.0	46.2	48.3	50.5	52.6	54.7	c	22 50.47	53 14 " "	III B	39.490	16 24 7.77	14 19 52.71	14 4433
133	9.3	31.6	33.8	35.8	37.8	40.0	c	23 35.81	53 14 " "	V B	38.270	16 24 53.11	14 19 30.72	14 4434
134	8.0	5.2	6.9	8.9	10.8	13.0	a	25 38.48	54 34 10.0 28.2	III A	39.180	16 26 55.97	15 46 14.12	15 4335
135	9.0	0.9	2.6	4.7	6.6	8.8	a	26 33.98	52 46 10.0 28.0	III	46.445	16 27 51.24	13 57 13.89	13 4453
136	9.1	8.8	10.3	14.4	16.5	18.7	b_2 c_3	27 18.71	53 20 10.0 27.8	III	48.390	16 28 36.04	14 31 51.99	14 4445
137	9.5	21.0	23.0	24.9	26.9	29.0	a	28 54.35	53 42 10.0 27.7	I	44.670	16 30 11.73	14 52 39.62	14 4452
138	9.3	54.0	55.9	57.6	59.7	2.0	a	32 27.21	53 32 10.0 27.9	I	46.740	16 33 44.57	14 43 17.08	14 4467
139	9.4	34.5	36.3	38.3	40.0	42.3	a	33 7.61	53 16 10.0 28.0	III	42.540	16 34 24.93	14 25 57.98	14 4469
140	9.1	19.5	21.2	23.0	25.0	27.3	a	36 52.47	52 46 10.0 28.2	I	48.390	16 38 9.73	−13 57 44.65	−13 4486
141	9.2	53.8	55.6	57.6	59.6	1.8	a	38 27.27	55 4 10.0 28.1	I	48.450	16 39 44.82	−16 15 51.41	−16 4343
142	9.6	50.0	52.0	53.9	55.9	58.0	a	39 23.41	54 8 10.0 28.3	I	46.780	16 40 40.84	15 19 16.64	15 4388
143	9.5	0.4	2.2	4.0	6.0	8.0	a	40 33.45	53 16 10.0 27.6	I	45.410	16 41 50.77	14 26 47.31	14 4484
144	6.6	55.7	57.6	59.5	1.3	3.5	a	41 28.89	53 32 10.0 27.8	III	48.760	16 42 46.25	14 43 53.30	14 4486
145	8.8	8.0	9.4	13.6	15.8	17.9	b_2 c_3	45 17.91	53 2 10.0 27.8	III	43.150	16 46 35.20	14 12 3.42	14 4494
146	9.3	41.9	43.5	47.5	49.8	51.9	b_2 c_3	45 51.89	53 2 " "	III	40.380	16 47 9.18	14 11 10.45	14 4495
147	8.9	47.9	49.7	51.5	53.5	55.6	a	47 20.93	53 2 " "	I	40.630	16 48 38.22	−14 11 12.83	−14 4498

Reduction Elements. Zone 53.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 14.3....	−0.052	−0.269	−0.327	−0.034	−0.265	−0.327
14.5....	−0.016	−0.261				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	53 Virginis		α Virginis		73 Virginis		47 Hydrae		γ Scorpii		ι Librae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 28 3.65		49 26 3.80		57 0 4.45		63 16 3.70		63 40 3.80		58 12 4.60	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.840	5 10.71		6 12.94	47.620	6 23.06	47.520	6 20.73	49.320	6 55.40		6 45.89
II Red. to Mer......	.790	1.65		1.70	.605	1.63	.490	1.56	.285	1.55	48.815	1.64
VI Inclination......	.630		46.990	2.04	.430		.305		.160		.710	0.82
VII Refraction.......	.610	1 18.8	.990	1 6.0	.430	1 26.9	.280	1 52.2	.125	1 54.8	.640	1 31.8

	ζ Ophiuchi		24 Scorpii		20 Ophiuchi		24 Ophiuchi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	49 12 4.20		56 22 4.10		49 26 3.95		61 48 4.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42.770	4 51.44	45.175	5 36.34	44.670	5 26.27	46.230	5 56.70
II Red. to Mer......	.750	1.70	.130	1.64	.615	1.70	.190	1.57
VI Inclination......	.675		44.990		.480		.080	
VII Refraction.......	.620	1 6.3	.965	1 26.0	.380	1 6.9	.040	1 46.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
53 Virginis	13 5 26.93	11	−0.47	+60.23	54 34 34.8	42.3
α Ursae Minoris S. P.	13 18 26.96	5	−2.86	[+60.18]	307 42	....
α Virginis	13 18 38.54	11	−0.46	+60.19	49 33 26.5	43.0
73 Virginis	13 25 21.85	11	−0.48	+60.24	57 7 56.0	42.4
47 Hydrae	13 51 36.69	11	−0.49	+60.00	63 24 18.2	42.4
γ Scorpii	14 56 54.65	11	−0.49	+60.13	63 48 55.6	42.7
ι Librae	15 5 13.46	11	−0.48	+60.09	58 20 24.8	42.8
ζ Ophiuchi	16 30 22.18	11	−0.46	+60.17	49 18 3.6	43.2
24 Scorpii	16 34 29.61	11	0.48	+60.07	56 29 8.1	42.5
20 Ophiuchi	16 43 1.11	11	−0.46	+60.14	49 32 38.8	43.5
24 Ophiuchi	16 49 27.60	11	−0.48	+60.13	61 55 49.0	42.3

h 13.000	dt	s +60.172
	Hourly rate	− 0.0160
	Adopted Equator Point	° ′ ″ 38 56 42.71

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
13 0	30.035	69.4	68.2
13 55	30.035	66.8	65.3
14 55	30.045	65.0	63.2
15 55	30.045	63.1	61.3
16 50	30.045	61.8	59.6

Notes.

14. Very close double, mean observed; following star fainter.

21.133. Double, second component observed.

84. Close double; faint companion follows.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.467	13 0	......	+17.311	+17.355	+17.401	+17.444	+17.489
53	0.468	13 30	......	17.370	17.431	17.491	17.552	17.613
54	0.470	14 0	......	17.426	17.500	17.577	17.653	17.729
55	0.472	14 30	......	17.476	17.566	17.655	17.745	17.836
56	0.474	15 0	......	17.523	17.624	17.727	17.828	17.931
57	−0.476	15 30	+17.451	17.563	17.674	17.787	17.898	18.014
		16 0	17.476	17.597	17.716	17.837	17.959	18.081
		16 30	17.497	17.623	17.749	17.877	18.005	18.132
		17 0	+17.508	+17.639	+17.772	+17.903	+18.036	+18.169

APPARENT RIGHT ASCENSION.	$D=$ Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
13 0	.....	−15.62	−15.93	−16.25	−16.57	−16.88	73.11	74.44	77.20	80.08	83.12	86.30
13 30	.....	16.06	16.37	16.67	16.96	17.26	73.35	74.68	77.45	80.33	83.39	86.58
14 0	.....	16.26	16.52	16.80	17.07	17.35	73.57	74.90	77.68	80.57	83.64	86.84
14 30	.....	16.17	16.42	16.66	16.91	17.15	73.74	75.08	77.86	80.76	83.83	87.04
15 0	.....	15.83	16.04	16.27	16.48	16.69	73.89	75.23	78.02	80.93	84.00	87.22
15 30	−15.06	15.24	15.42	15.59	15.77	15.95	74.03	75.37	78.16	81.08	84.16	87.38
16 0	14.26	14.39	14.53	14.67	14.81	14.94	74.17	75.51	78.31	81.23	84.31	87.54
16 30	13.22	13.31	13.41	13.51	13.60	13.70	74.32	75.67	78.47	81.40	84.49	87.72
17 0	−11.97	−12.02	−12.07	−12.13	−12.18	−12.23	74.46	75.81	78.61	81.55	84.64	87.88

1894 JUNE 22. ZONE 54. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.0	28.7	30.4	32.4	34.3	36.5	a	59 1.83	53 34 10.0	26.4	I	46.240	14 0 23.03	−14 45 57.19	−14 3868
2	9.0	54.5	56.3	58.2	0.3	2.4	a	59 27.72	53 34 “	“	I	49.370	14 0 48.92	14 46 56.66	14 3870
3	9.4	32.9	35.0	37.3	39.4	41.6	c	59 37.25	53 34 “	“	V B	46.645	14 0 58.44	14 42 55.82	14 3871
4	8.5	20.4	22.2	24.5	26.7	28.8	c	12 24.53	53 34 10.0	25.4	V	48.150	14 13 45.75	14 46 32.92	14 3922
5	9.3	9.6	11.4	13.3	15.0	17.4	a	22 42.69	53 22 10.0	25.0	I	46.870	14 24 3.90	14 34 1.49	14 3965
6	8.4	56.9	58.6	0.8	2.8	4.9	a	35 30.65	56 40 10.0	27.3	I	50.280	14 36 52.18	17 53 12.16	17 4154
7	9.0	28.8	30.9	33.3	35.5	37.6	c	35 33.23	56 40 “	“	III B	41.920	14 36 54.75	17 47 22.55	17 4155
8	8.9	10.7	12.9	14.9	16.8	18.9	e	35 44.92	56 40 “	“	VII A	45.710	14 37 6.45	17 55 2.85	17 4157
9	9.0	43.8	45.6	47.5	49.4	51.7	a	43 17.45	56 42 10.0	26.5	I	46.090	14 44 39.00	17 53 49.66	17 4187
10	......	51.2	53.4	55.2	57.3	59.4	a	44 25.13	56 42 “	“	III B	36.800	14 45 46.67	−17 47 41.96	−17 4192
11	6.0	42.9	44.4	48.8	50.8	53.1	$b_2 c_3$	44 53.06	56 42 “	“	III A	44.560	14 46 14.64	−17 56 34.95	−17 4200
12	8.8	30.9	33.2	35.0	36.9	39.0	e	45 5.21	55 54 10.0	26.4	VII	45.875	14 46 26.69	−17 5 47.58	−16 3953

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
13	8.8	17.9	19.4	21.3	23.4	25.5	a	48 51.36	56 46 10.0 26.1	I	45.580	14 50 12.93	—17 57 38.12	—17 4214
14	9.2	22.4	24.3	26.3	28.0	30.4	a	54 56.09	56 28 10.0 26.8	I	44.850	14 56 17.65	17 39 21.70	17 4237
15	9.2	54.7	56.7	58.9	1.2	3.3	c	54 58.97	56 28 " "	III	48.300	14 56 20.53	17 40 29.18	17 4238
16	9.1	35.0	36.6	40.8	43.0	45.0	b_2 c_3	55 45.13	56 28 " "	III B	38.700	14 57 6.68	17 34 13.87	17 4241
17	9.1	20.7	22.4	24.5	26.4	28.5	a	57 54.40	57 6 10.0 26.6	I B	37.400	14 59 16.02	18 11 48.32	18 3965
18	8.9	45.4	47.2	49.2	51.3	53.4	a	58 19.21	57 6 " "	I	34.740	14 59 40.83	18 14 9.82	18 3969
19	9.7	51.6	53.4	55.4	57.4	59.5	a	59 25.38	57 6 " "	III A	45.060	[15 0 47.02]	18 20 40.84	18 3975
20	8.9	55.5	57.7	59.5	1.4	3.4	e	59 29.77	55 28 10.0 26.2	VII	48.590	15 0 51.23	—16 40 33.14	—16 4004
21	8.9	4.5	6.0	8.0	10.0	12.3	a	2 37.86	55 50 10.0 26.3	I	42.760	15 3 59.35	—17 0 37.23	—16 4017
22	8.7	50.3	52.0	54.0	56.0	58.2	a	3 23.64	54 40 10.0 25.3	III A	42.410	15 4 45.02	15 53 41.61	15 4042
23	9.1	38.0	39.9	41.7	43.7	45.9	a	4 11.38	54 40 " "	I A	43.280	15 5 32.76	15 53 56.20	15 4044
24	9.2	29.8	31.7	33.9	35.9	38.0	a	5 3.69	56 36 10.0 27.0	III A	39.915	15 6 25.27	17 48 59.67	17 4272
25	......	......	53.4	55.5	57.5	59.5	a	5 25.32	56 36 " "	III B	40.560	15 6 46.89	17 42 46.40	17 4273
26	9.3	11.0	12.7	14.7	16.8	18.8	a	6 44.64	56 36 " "	I (A)	46.590	15 8 6.23	17 51 4.43	17 4280
27	9.2	11.1	13.5	15.6	17.4	19.4	e	6 45.44	56 56 10.0 26.8	V	42.730	15 8 7.06	[18 6 42.05]	17 4281
28	9.2	6.4	8.3	10.0	12.0	14.5	a	10 39.92	55 38 10.0 26.1	I	46.290	15 12 1.41	16 49 40.96	16 4049
29	8.9	10.0	11.9	13.9	15.8	18.0	a	13 43.48	54 52 10.0 25.4	I	47.090	15 15 4.89	16 3 52.68	15 4082
30	8.7	41.7	43.5	45.4	47.3	49.8	a	14 15.38	56 40 10.0 26.2	III	45.250	15 15 36.99	—17 51 24.66	—17 4314
31	.....	58.7	0.3	2.3	4.3	6.6	a	16 32.01	55 6 10.0 25.7	I B	39.890	15 17 53.44	—16 12 23.13	—16 4070
32	9.7	21.8	23.7	25.7	27.6	29.9	a	16 55.34	55 6 " "	III A	40.920	15 18 16.79	16 19 9.76	16 4072
33	9.6	59.3	1.4	3.6	5.8	7.9	c	19 3.61	57 2 10.0 25.2	V	47.550	15 20 25.27	[18 14 8.89]	18 4063
34	9.0	55.7	57.4	59.4	1.5	3.6	a	20 29.42	57 2 " "	I	48.060	15 21 51.08	[18 14 14.61]	18 4067
35	6.0	42.0	44.0	45.9	47.9	49.9	a	21 15.54	55 10 10.0 26.2	III	47.670	15 22 37.00	16 22 3.97	16 4089
36	9.1	20.7	22.6	24.5	26.4	28.6	a	22 54.44	56 54 10.0 27.4	I	46.100	15 24 16.09	18 5 37.12	17 4344
37	8.8	6.0	8.0	10.1	12.4	14.6	c	23 10.23	55 44 10.0 26.0	V	42.960	15 24 31.75	16 54 36.68	16 4097
38	8.6	40.0	42.0	44.2	46.6	48.6	c	25 44.29	56 24 10.0 26.3	III	45.340	15 27 5.89	17 35 21.41	17 4361
39	8.2	52.5	54.6	56.7	59.0	1.3	c	26 56.83	55 56 10.0 26.0	III	45.670	15 28 18.38	17 7 25.77	16 4113
40	7.0	25.0	26.6	28.5	30.5	32.5	a	27 58.29	55 36 10.0 26.1	III	48.110	15 29 19.81	—16 48 10.95	—16 4114
41	9.1	35.0	37.0	38.9	41.0	43.0	a	30 8.79	56 30 10.0 26 4	I	48.380	15 31 30.41	—17 42 16.11	17 4380
42	8.4	4.6	6.9	9.0	11.3	13.7	c	30 9.11	56 52 10.0 26.6	V B	45.630	15 31 30.76	18 0 16.01	17 4379
43	8.8	52.2	54.1	56.0	58.0	0.2	a	31 25.99	56 52 " "	I A	47.500	15 32 47.66	18 7 13.29	17 4386
44	9.2	52.4	54.0	56.3	58.2	0.5	a	32 26.15	56 52 " "	III B	41.950	15 33 47.80	[17 59 3.55]	17 4393
45	9.2	22.2	24.3	26.6	28.8	31.0	(c)	32 26.59	56 52 " "	V B	47.880	15 33 48.25	18 0 57.99	17 4394
46	8.2	58.9	0.7	2.5	4.6	6.9	a	35 32.63	57 6 10.0 26.8	I	44.980	15 36 54.33	18 17 11.32	18 4136
47	9.1	27.4	29.2	31.3	33.2	35.4	a	36 1.06	56 16 10.0 26.0	III B	40.970	15 37 22.65	17 22 41.45	17 4405
48	9.3	10.4	12.3	14.3	16.2	18.3	a	36 44.08	56 16 " "	I A	41.030	15 38 5.69	17 29 6.01	17 4409
49	9.4	14.7	16.3	18.3	20.4	22.5	a	37 48.21	56 16 " "	III B	42.390	15 39 9.80	17 23 7.78	17 4413
50	9.2	25.0	27.0	29.0	31.0	33.2	a	38 58.88	56 40 10.0 26.5	III	45.910	15 40 20.52	—17 51 28.05	—17 4415
51	9.0	3.8	6.4	8.0	12.3	14.4	b_1 c_2	39 16.61	56 40 " "	IV B	50.600	15 40 38.25	—17 49 45.71	—17 4417
52	8.0	11.0	13.0	15.3	17.4	19.5	c	40 15.25	56 40 " "	III B	41.280	15 41 36.89	17 46 47.09	17 4421
53	9.3	26.0	28.2	30.0	32.0	34.0	e	41 0.19	56 18 10.0 26.4	VII	41.190	15 42 21.79	17 27 59.37	17 4425
54	8.8	27.5	29.7	31.9	34.0	36.4	c	55 31.91	56 46 10.0 25.5	V B	43.900	15 56 53.58	17 53 32.21	17 4472
55	8.0	6.7	8.7	11.0	13.3	15.4	c	56 11.03	56 46 " "	V A	42.470	15 57 32.71	17 59 30.12	17 4478
56	7.0	21.5	23.6	25.4	27.4	29.9	a	57 55.47	57 4 10.0 27.0	I	47.550	15 59 17.19	18 15 51.30	18 4228
57	8.4	40,0	42.0	44.0	46.0	48.2	a	0 13.93	56 50 10.0 27.2	I A	50.070	16 1 35.63	18 5 50.92	17 4493
58	7.8	26.0	27.8	29.8	31.5	34.0	a	0 59.68	56 50 " "	I B	46.580	16 2 21.37	17 58 18.70	17 4494
59	7.0	14.2	16.0	17.9	20.0	22.3	a	2 47.96	56 54 10.0 27.6	I	43.370	16 4 9.66	18 4 29.49	17 4502
60	8.1	35.0	36.9	38.7	40.7	42.9	a	4 8.68	56 36 10.0 26.8	I A	48.560	16 5 30.36	—17 51 19.66	—17 4508
61	9.1	52.3	54.2	56.3	58.0	0.3	a	4 26.04	56 36 " "	III B	46.740	16 5 47.70	—17 44 21.16	—17 4510
62	7.0	50.0	52.0	54.5	56.7	58.9	c	4 54.43	56 44 10.0 26.6	V A	45.360	16 6 16.12	17 58 21.95	17 4511
63	8.0	15.2	17.2	19.4	21.6	23.8	c	6 19.45	56 44 " "	III B	41.460	16 7 41.13	17 50 40.18	17 4514
64	9.0	53.8	55.8	58.0	0.4	2.4	c	6 58.09	56 44 " "	III A	39.810	16 8 19.78	17 56 33.92	17 4518
65	6.5	26.8	29.0	31.3	33.4	35.7	c	7 31.25	57 6 10.0 26.9	V	43.910	16 8 52.99	18 16 41.54	18 4249
66	9.3	3.8	5.6	7.5	9.3	11.6	a	9 37.15	55 6 10.0 26.5	I	43.080	16 10 58.64	16 16 15.44	16 4258
67	8.0	47.0	49.0	51.0	52.9	55.2	a	11 20.74	55 58 10.0 26.4	I	43.600	16 12 42.34	17 8 26.96	17 4534
68	9.2	30.0	31.9	34.0	36.0	38.0	a	12 3.65	55 34 10.0 26.0	I A	41.170	16 13 25.20	16 46 52.30	16 4267
69	9.0	57.0	59.0	1.0	2.8	4.9	a	12 30.59	55 34 " "	I B	41.000	16 13 52.13	16 40 23.40	16 4268
70	9.0	30.0	31.9	34.0	36.0	38.0	a	13 3.88	57 0 10.0 26.6	III	42.760	16 14 25.61	—18 10 15.22	—18 4264
71	9.0	12.6	14.3	16.3	18.4	20.5	a	15 46.11	55 40 10.0 26.1	I A	48.130	16 17 7.67	—16 55 3.53	—16 4279
72	6.0	43.4	45.4	47.7	50.0	52.0	c	15 47.71	55 40 " "	III B	42.940	16 17 9.26	16 47 1.02	16 4280
73	9.3	14.0	16.1	18.4	20.7	22.9	c	17 18.43	56 20 10.0 26.4	III	44.590	16 18 40.07	17 30 46.16	17 4562
74	5.5	18.0	20.0	22.0	24.0	26.0	a	19 51.91	57 2 10.0 26.5	I	47.660	16 21 13.64	18 13 43.82	18 4282
75	8.0	49.3	51.5	53.7	55.9	58.0	c	19 53.69	56 26 10.0 26.1	V B	41.160	16 21 15.34	17 32 29.13	17 4572
76	8.7	19.3	21.0	23.2	25.2	27.3	a	20 53.00	56 26 " "	III	46.350	16 22 14.65	17 37 18.26	17 4575
77	9.1	56.6	58.4	0.4	2.3	4.6	a	22 30.33	56 54 10.0 27.3	I B	43.400	16 23 52.04	18 1 9.32	17 4585
78	9.2	42.2	44.1	46.1	48.0	50.1	a	23 15.99	56 54 " "	I A	41.850	16 24 37.71	18 7 4.97	18 4288
79	8.6	57.2	59.0	0.9	2.9	5.0	a	24 30.78	56 18 10.0 26.7	I A	38.030	16 25 52.42	17 29 49.63	17 4591
80	9.4	41.4	43.1	45.2	47.1	49.3	a	25 15.05	56 36 10.0 27.1	III	46.390	16 26 36.73	—17 47 18.14	—17 4594
81	8.4	9.0	10.8	12.8	14.8	16.9	a	27 42.75	56 54 10.0 27.2	III	47.370	16 29 4.47	—18 5 36.67	—17 4601
82	8.1	12.7	14.7	17.0	19.1	21.4	c	28 16.99	54 52 10.0 25.4	V	47.470	16 29 38.45	16 3 33.19	15 4346
83	8.7	9.3	11.1	13.0	15.1	17.2	a	32 42.75	55 14 10.0 26.0	I	45.640	16 34 4.26	16 24 54.28	16 4325
84	9.5	2.1	4.0	5.9	8.0	10.0	a	33 35.72	55 56 10.0 26.0	I	45.970	16 34 57.32	17 7 2.16	17 4613
85	8.9	53.8	55.6	57.5	59.4	1.7	a	34 27.26	55 38 10.0 26.2	III B	41.330	16 35 48.81	—16 44 22.21	—16 4327

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
86	9.0	37.5	39.7	41.7	43.7	45.9	a	35 11.38	55 38 10.0 26.2	I A	39.020	16 36 32.94	−16 50 1.64	−16 4332
87	9.3	1.5	3.2	5.1	7.1	9.4	a	36 35.02	56 8 10.0 26.6	I	47.630	16 37 56.65	17 19 33.33	17 4623
88	9.1	......	32.1	34.0	36.0	38.1	a	37 3.84	56 8 " "	I B	44.220	16 38 25.46	17 15 15.96	17 4626
89	8.5	24.8	26.6	28.6	30.5	32.5	a	38 58.26	55 32 10.0 26.0	I	46.060	16 40 19.81	16 43 0.37	16 4344
90	9.1	56.0	58.0	59.8	1.7	3.8	a	39 29.52	55 32 " "	I	44.550	16 40 51.07	−16 42 31.41	−16 4347
91	8.0	23.2	24.9	26.8	28.8	31.0	a	40 56.46	54 36 10.0 25.5	I	46.070	16 42 17.89	−15 46 56.86	−15 4392
92	9.3	13.3	15.3	16.9	19.1	21.3	a	41 47.04	56 50 10.0 27.2	I B	39.340	16 43 8.75	17 55 43.35	17 4637
93	9.0	2.9	4.5	6.4	8.5	10.7	a	42 36.48	56 50 " "	I A	48.800	16 43 58.21	18 5 8.56	18 4332
94	9.4	53.9	56.0	58.3	0.4	2.7	c	42 58.27	56 50 " "	III B	43.900	16 44 19.98	17 57 11.38	17 4641
95	8.0	9.4	11.5	13.7	15.9	18.0	c	44 13.71	56 34 10.0 26.3	III A	39.185	16 45 35.40	17 46 5.27	17 4643
96	9.0	47.3	49.3	51.6	53.8	55.9	c	44 51.59	56 20 10.0 26.7	V	42.090	16 46 13.24	17 29 49.30	17 4644
97	7.9	13.1	14.9	16.8	18.9	20.9	a	46 46.76	56 38 10.0 26.7	I	44.830	16 48 8.45	17 48 37.04	17 4646
98	7.7	20.5	22.2	24.1	26.1	28.3	a	48 53.89	55 28 10.0 25.7	I	45.690	16 50 15.43	16 38 48.56	16 4371
99	8.9	50.9	52.8	54.6	56.7	59.1	a	49 24.69	56 48 10.0 26.6	III	44.010	16 50 46.40	17 58 22.56	17 4663
100	9.3	55.4	57.3	59.0	1.2	3.3	a	50 29.11	56 48 " "	I (A)	44.040	16 51 50.83	−18 1 34.03	−17 4670
101	9.3	54.6	56.6	58.4	0.5	2.6	a	51 28.39	56 48 " "	I B	39.780	16 52 50.09	−17 53 47.00	−17 4673
102	9.0	37.1	39.1	40.9	42.9	45.0	a	52 10.66	55 34 10.0 26.6	III	46.180	16 53 32.21	16 44 58.97	16 4386
103	8.9	11.4	13.6	15.7	17.8	19.9	c	57 15.69	56 48 10.0 26.5	III	49.070	16 58 37.40	17 59 55.30	17 4698
104	8.6	3.3	5.2	7.1	9.0	11.1	a	58 37.01	56 48 " "	I	45.450	16 59 58.72	17 58 43.94	17 4705
105	9.3	31.5	33.3	35.2	37.3	39.4	a	59 5.18	56 38 10.0 26.7	III	44.740	17 0 26.87	17 48 31.64	17 4709
106	9.6	52.5	54.3	56.4	58.3	0.6	a	0 26.17	56 6 10.0 26.6	I	45.870	17 1 47.79	17 16 49.05	17 4713
107	9.1	10.4	12.2	14.1	16.1	18.4	a	0 43.98	56 6 " "	III B	48.000	17 2 5.59	17 14 18.97	17 4714
108	8.9	18.0	19.9	24.0	25.7	28.4	c_4 d_3	1 15.56	56 56 10.0 26.8	VI B	41.500	17 2 37.28	18 2 19.87	17 4718
109	9.0	51.4	53.5	55.6	57.9	0.1	c	1 55.71	56 56 " "	VI A	37.940	17 3 17.44	18 7 37.16	18 4427
110	8.0	1.6	3.9	6.1	8.1	10.4	c	5 6.03	55 56 10.0 25.4	V	47.770	17 6 27.63	−17 7 25.49	−17 4742
111	8.8	9.0	10.9	12.8	14.8	17.0	a	6 42.79	56 54 10.0 27.4	I	49.600	17 8 4.52	−18 6 0.05	−18 4459
112	9.0	3.6	5.9	8.0	10.4	12.7	c	7 8.13	55 54 10.0 26.0	V	44.570	17 8 29.72	17 4 23.85	17 4752
113	8.6	54.3	56.3	58.2	0.1	2.4	a	8 27.98	55 54 " "	I A	42.360	17 9 49.58	17 6 50.93	17 4755
114	9.3	59.7	1.5	3.4	5.3	7.6	a	9 33.21	55 54 " "	I B	48.960	17 10 54.80	17 2 30.60	16 4463
115	9.4	48.3	50.1	52.0	54.0	56.2	a	10 21.95	56 32 10.0 26.6	I A	44.860	17 11 43.63	17 45 39.84	17 4763
116	9.3	25.0	27.1	29.2	31.5	33.6	c	10 29.29	56 32 " "	III	47.170	17 11 50.97	17 43 12.37	17 4764
117	9.4	30.6	32.6	34.4	36.4	38.7	a	12 4.36	56 32 " "	I	46.470	17 13 26.04	17 42 56.48	17 4769
118	9.5	1.5	3.5	5.6	7.5	9.7	a	12 35.38	56 32 " "	I	43.770	17 13 57.05	18 2 4.85	17 4772
119	6.0	38.0	40.0	42.1	44.4	46.6	c	12 42.23	56 32 " "	III B	44.490	17 14 3.90	17 39 8.02	17 4773
120	9.0	28.0	29.9	32.0	33.9	36.0	a	14 1.82	56 46 10.0 26.5	III	43.750	17 15 23.52	−17 56 6.32	−17 4782
121	9.0	59.7	1.7	4.0	6.2	8.4	c	14 4.01	56 46 " "	V	46.110	17 15 25.72	−17 56 52.85	−17 4783
122	9.5	4.8	6.5	8.5	10.4	12.6	a	15 38.45	56 56 10.0 26.6	III	41.680	17 17 0.17	18 5 26.74	18 4509
123	9.3	53.3	55.4	57.6	59.7	2.0	c	15 57.61	56 56 " "	III B	38.500	17 17 19.33	18 1 13.75	17 4792
124	9.0	2.4	4.4	6.6	8.7	10.9	c	17 6.61	56 56 " "	III B	42.220	17 18 28.33	18 2 24.01	17 4797
125	8.8	34.2	36.0	38.1	40.0	42.1	a	18 7.98	56 56 " "	III A	50.510	17 19 29.72	18 11 26.81	18 4524
126	9.1	49.3	51.2	53.0	55.1	57.2	a	19 22.91	56 6 10.0 26.3	I	47.370	17 20 44.53	17 17 8.82	17 4807
127	9.0	48.7	50.7	52.6	54.5	56.8	a	21 22.57	57 2 10.0 26.5	I	46.243	17 22 44.31	18 12 49.40	18 4536
128	9.2	56.0	57.9	59.8	1.7	3.9	a	22 29.68	56 34 10.0 25.4	I	42.310	17 23 51.36	17 43 32.03	17 4821^2
129	8.5	13.3	15.1	17.2	19.1	21.1	a	22 46.98	56 34 " "	III	43.480	17 24 8.66	17 43 56.01	17 4825
130	9.0	55.1	56.9	58.8	0.9	3.0	a	23 28.78	56 34 " "	III A	46.420	17 24 50.47	−17 48 4.77	−17 4829
131	7.8	14.6	16.4	18.3	20.3	22.6	a	25 48.21	56 14 10.0 26.1	I	48.390	17 27 9.83	−17 25 25.60	−17 4841
132	8.8	13.9	15.7	17.4	19.5	21.7	a	26 47.47	56 36 10.0 27.0	I	43.680	17 28 9.14	17 45 57.05	17 4848
133	7.9	12.0	16.3	18.6	20.8	23.0	(b_3c_4)	27 20.74	56 58 10.0 27.2	III	47.220	17 28 42.46	18 9 7.25	18 4570
134	9.3	38.0	40.0	42.2	44.3	46.5	c	27 42.21	56 58 " "	V A	43.300	17 29 3.94	18 11 7.10	18 4572
135	9.3	7.1	9.3	11.4	15.8	17.5	c_3 d_2	28 7.16	56 58 " "	V A	42.010	17 29 28.89	18 10 42.34	18 4578
136	9.0	50.3	52.4	54.6	56.8	58.9	c	31 54.61	56 18 70.0 26.0	V B	39.225	17 33 16.23	17 23 18.55	17 4871
137	9.3	23.8	25.8	27.3	29.5	31.6	a	32 57.39	56 18 " "	III A	46.060	17 34 19.02	17 31 53.04	17 4880
138	9.3	32.9	34.6	36.6	38.7	40.8	a	34 6.57	56 42 10.0 26.2	III A	41.030	17 35 28.25	17 54 18.09	17 4886
139	9.2	6.4	8.2	10.1	12.1	14.4	a	34 40.09	56 42 " "	III A	39.890	17 36 1.77	17 53 56.13	17 4892
140	9.3	43.1	45.4	47.5	49.7	51.8	c	34 47.51	56 42 " "	V B	40.420	17 36 9.18	−17 47 42.28	−17 4893
141	9.4	34.0	36.2	38.3	40.7	42.8	c	35 38.41	56 42 " "	VI (A)	40.180	17 37 0.09	−17 54 3.41	−17 4895
142	8.5	42.5	44.4	46.3	48.4	50.6	a	37 16.16	55 58 8.6 24.6	III	37.970	17 38 37.74	17 6 1.53	17 4907
143	8.7	41.3	43.5	45.7	48.0	50.1	c	37 45.73	55 58 " "	III A	43.540	17 39 7.32	17 11 0.44	17 4910
144	9.2	5.9	8.0	10.1	14.5	16.4	c_3 d_2	38 5.95	55 58 " "	VI A	45.390	17 39 27.54	17 11 37.70	17 4912
145	9.8	38.2	40.0	41.7	44.0	46.4	a	41 11.81	56 6 8.7 25.0	III	43.240	17 42 33.40	17 15 40.70	17 4923
146	9.0	11.0	12.9	14.8	16.7	18.9	a	42 44.61	56 6 " "	I	47.410	17 44 6.21	17 16 57.55	17 4928
147	9.1	12.7	14.5	16.4	18.3	20.5	a	43 46.22	56 6 " "	I B	47.130	17 45 7.81	17 13 39.49	17 4932
148	8.8	37.0	38.8	40.8	42.8	44.9	a	45 10.74	56 54 10.0 27.9	I	43.890	17 46 32.44	18 3 53.98	18 4666
149	8.7	32.4	34.3	36.1	38.1	40.3	a	46 6.01	56 18 10.0 26.2	I	43.150	17 47 27.63	17 27 36.76	17 4941
150	8.8	14.3	16.2	18.1	20.1	22.3	a	46 47.97	56 18 " "	I B	40.120	17 48 9.58	−17 23 26.51	−17 4946
151	9.1	9.1	10.9	12.9	15.0	17.3	a	48 42.70	55 34 10.0 26.1	I	43.700	17 50 4.22	−16 43 43.81	−16 4656
152	9.1	54.1	56.2	58.3	0.6	2.6	c	48 58.37	56 10 10.0 27.0	III A	50.505	17 50 19.98	17 25 10.41	17 4958
153	9.0	20.9	23.0	24.8	26.8	28.9	a	49 54.63	56 10 " "	III B	41.000	17 51 16.22	−17 15 43.60	−17 4966

Reduction Elements. Zone 54.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 22.3....	−0.168	−0.440	−0.225	−0.118	−0.372	−0.216
22.5....	−0.068	−0.305	−0.208			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	47 Hydrae		κ Virginis		2 Librae		Mayer 575		ζ Ophiuchi		η Ophiuchi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	63 16 3.40		48 36 2.85		50 4 2.95		58 48 3.55		49 12 2.95		54 26 2.55	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	47.890	6 27.48	48.635	6 41.70	45.220	5 36.90	46.110	5 3.70	43.090	4 56.71		5 10.85
II Red. to Mer......	.840	1.56	.570	1.70	.170	1.70	.030	1.60	.050	1.70		1.65
III Inclination	.655		.410		.040		45.890		42.950		43.750	2.04
VII Refraction.......	.630	1 47.3	.390	1 1.5	44.950	1 4.8	.880	1 29.6	.840	1 3.6	.700	1 16.8

	ξ Serpentis		ν Ophiuchi	
	° ′ ″		° ′ ″	
CIRCLE READING.	54 10 2.50		48 36 3.25	
	r	′ ″	r	′ ″
I Microm. Eq......	44.805	5 28.81		5 22.64
II Red. to Mer......	.720	1.66		1.70
III Inclination	.620		44.350	2.04
VII Refraction.......	.530	1 16.1	.340	1 2.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
α Ursae Minoris S. P.	13 18 20.18	6	+7.93	[- 63.92]	307 42	....
α Virginis	13 18 34.42	11	−0.53	+64.32	49 30	....
47 Hydrae	13 51 32.39	11	−0.52	64.30	63 24 19.7	43.7
κ Virginis	14 6 12.80	11	−0.53	+64.17	48 43 47.7	44.5
2 Librae	14 16 41.86	11	−0.53	+64.11	50 10 46.4	44.1
Mayer 575	14 27 51.26	11	−0.53	+64.21	58 55 28.4	44.1
ζ Ophiuchi	16 30 18.38	11	−0.53	+64.08	49 18 5.0	45.0
ε Ursae Minoris.....	16 55 55.71	8	−1.78	[+64.12]	316 44	....
η Ophiuchi	17 3 17.10	6	−0.53	+64.16	54 32 33.9	46.4
ξ Serpentis	17 30 30.24	11	−0.53	+64.17	54 16 49.1	45.6
ν Ophiuchi	17 52 10.53	11	−0.53	+64.26	48 42 32.0	46.4

h 14.002	...........*dt*	s +64.222
	Hourly rate	− 0.0167
	Adopted Equator Point..........	° ′ ″ 38 56 44.98

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
13 55	29.865	84.3	85.3
14 50	29.885	82.5	82.8
15 45	29.875	80.0	79.6
16 50	29.875	78.6	78.2
17 55	29.875	78.0	77.6

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0					*D* = Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	−0.531	14 0	+17.454	+17.529	+17.605	......	......	−16.17	−16.48	−16.77	.....	....
54	0.530	14 30	+17.490	17.580	17.669	+17.759	+17.849	−16.10	16.38	16.65	−16.93	−17.21
55	0.529	15 0	......	17.622	17.723	17.824	17.927	.....	16.01	16.26	16.51	16.76
56	0.528	15 30	......	17.653	17.764	17.878	17.992	.....	15.36	15.58	15.80	16.00
57	−0.528	16 0	......	17.675	17.795	17.916	18.038	.....	14.45	14.63	14.82	14.98
		16 30	......	17.686	17.813	17.940	18.069	.....	13.29	13.42	13.56	13.70
		17 0	......	+17.687	17.818	17.949	18.082	.....	−11.88	11.98	12.08	12.18
		17 30	......	......	17.810	17.943	18.078	.....	.....	10.35	10.40	10.46
		18 0	......	......	+17.788	+17.922	+18.056	.....	.....	− 8.51	− 8.52	− 8.53

APPARENT RIGHT ASCENSION.	R					
	53°	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″	″
14 0	71.63	74.29	77.06	79.98	83.04	84.64
14 30	71.84	74.51	77.29	80.22	83.29	84.90
15 0	72.08	74.75	77.54	80.48	83.56	85.17
15 30	72.31	74.99	77.79	80.74	83.83	85.45
16 0	72.48	75.16	77.96	80.93	84.02	85.64
16 30	72.56	75.25	78.05	81.02	84.12	85.74
17 0	72.63	75.32	78.13	81.10	84.20	85.82
17 30	72.66	75.35	78.16	81.13	84.24	85.86
18 0	72.70	75.39	78.20	81.17	84.28	85.90

1894 JUNE 29. ZONE 55. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.4	56.0	58.0	0.0	1.9	4.1	a	35 29.52	54 34 10.0 25.3	I 48.570	14 36 54.61	—15 46 31.75	—15 3936
2	8.7	50.7	52.5	54.5	56.5	58.6	a	44 24.33	56 12 10.0 26.8	I A 48.650	14 45 49.58	17 27 48.70	17 4193
3	8.7	16.1	17.7	22.0	24.1	26.3	b_2 c_3	44 26.29	56 12 " "	III B 38.245	14 45 51.52	17 18 6.94	17 4194
4	7.0	59.9	2.2	4.1	6.0	8.1	e	44 34.23	56 12 " "	VII 41.580	14 45 59.47	17 22 25.77	17 4196
5	8.6	32.0	34.3	36.2	38.0	40.1	e	45 6.28	56 12 " "	VII A 39.295	14 46 31.52	17 24 54.92	17 4202
6	8.0	30.5	32.2	34.2	36.2	38.3	a	56 4.02	56 2 10.0 26.5	III 47.870	14 57 29.26	17 14 17.99	17 4243
7	9.3	12.1	13.9	15.8	17.7	20.0	a	56 45.44	54 46 10.0 26.0	III 44.890	14 58 10.55	15 57 17.36	15 4017
8	8.0	54.5	56.2	58.1	0.1	2.4	a	57 28.04	56 18 10.0 26.0	III 49.260	14 58 53.31	17 30 44.44	17 4246
9	8.5	19.8	21.3	25.5	27.7	29.8	b_2 c_3	57 29.87	56 18 " "	....	14 58 55.14	17 30 46	17 4247
10	8.8	10.4	12.3	14.7	16.8	19.0	c	58 14.65	56 18 " "	V 44.730	14 59 39.92	—17 29 19.57	—17 4249
11	8.9	20.6	22.4	24.4	26.4	28.6	a	2 53.93	54 8 10.0 25.6	I 45.790	15 4 18.98	—15 19 28.76	—15 4038
12	9.4	1.7	3.5	5.7	7.5	9.8	a	4 35.41	56 14 10.0 27.5	I 43.990	15 6 0.68	17 25 0.37	17 4268
13	......	34.0	35.5	39.8	41.9	44.1	b_2 c_3	4 44.11	56 14 " "	III B 46.960	15 6 9.38	17 22 46.37	17 4270
14	9.1	13.5	15.3	17.1	19.2	21.3	a	5 46.94	55 34 10.0 26.0	III 45.475	15 7 12.14	16 45 27.48	16 4029
15	7.7	49.8	51.7	53.9	55.7	57.9	a	7 23.68	56 52 10.0 26.8	I 44.760	15 8 49.01	18 3 15.47	17 4283
16	9.0	21.5	23.5	25.6	27.9	30.1	c	7 25.73	56 52 " "	III 46.570	15 8 51.06	18 3 51.75	17 4284
17	8.8	57.6	59.5	1.6	4.0	6.0	c	10 1.75	54 0 10.0 25.6	III 49.140	15 11 26.78	15 12 31.45	15 4071
18	7.4	56.7	58.7	0.8	3.1	5.2	c	14 0.91	54 0 " "	III 45.270	15 15 25.94	15 11 16.36	15 4083
19	9.4	10.2	12.4	14.5	16.6	18.9	c	17 14.53	55 46 10.0 26.2	III 45.520	15 18 39.76	16 57 24.81	16 4074
20	8.9	42.5	44.4	46.2	48.3	50.5	a	19 16.19	56 28 10.0 27.7	I 44.110	15 20 41.49	—17 38 58.10	—17 4330
21	9.1	7.3	9.1	11.3	13.2	15.4	a	19 41.07	56 28 " "	I 43.820	15 21 6.37	—17 38 52.44	—17 4335
22	9.1	7.5	9.3	11.2	13.2	15.5	a	20 41.01	55 38 10.0 26.4	I 42.065	15 22 6.22	16 48 15.72	16 4087
23	9.0	59.8	1.4	3.3	5.5	7.6	a	22 33.14	55 18 10.0 26.4	I A 45.420	15 23 58.32	16 32 31.20	16 4094
24	8.6	29.9	31.4	35.7	37.9	40.1	b_2 c_3	22 40.03	55 18 " "	III 46.750	15 24 5.20	16 29 45.07	16 4095
25	9.3	46.7	48.5	50.9	53.0	55.2	c	24 50.87	56 58 10.0 27.4	V 43.150	15 26 16.23	18 8 42.49	17 4356
26	8.0	46.5	48.8	50.6	52.6	54.7	e	27 20.81	56 8 10.0 26.8	V A 42.680	15 28 46.08	17 21 42.92	17 4368
27	9.4	50.0	51.8	53.8	55.9	58.0	a	29 23.66	56 8 " "	I A 43.180	15 30 48.94	17 21 48.42	17 4375
28	9.0	34.1	36.0	38.0	40.1	42.3	a	30 7.79	55 44 10.0 26.5	III 43.360	15 31 33.02	16 54 38.92	16 4122
29	9.5	36.8	38.5	40.7	42.6	44.8	a	31 10.42	56 6 10.0 27.1	III B 44.750	15 32 35.68	17 13 53.96	17 4385
30	7.7	30.7	32.8	35.1	37.2	39.2	c	31 35.01	56 6 " "	III A 44.360	15 33 0.29	—17 20 11.79	—17 4388
31	9.2	57.7	59.8	4.0	5.5	8.4	c_4 d_3	31 55.50	55 34 10.0 26.6	V 42.890	15 33 20.70	—16 44 30.50	—16 4129
32	9.2	15.1	17.2	19.3	23.7	25.3	c_3 d_2	33 15.07	56 38 10.0 27.0	V A 49.775	15 34 40.40	17 53 57.23	17 4396
33	9.1	51.3	53.6	55.6	57.6	59.5	e	33 25.62	56 38 " "	VII B 37.510	15 34 50.93	17 43 39.67	17 4399
34	9.1	21.2	23.2	25.3	27.6	29.8	c	37 25.43	54 54 10.0 25.9	III 44.980	15 38 50.56	16 5 4.35	15 4174
35	7.9	12.4	14.3	16.3	18.2	20.3	a	39 45.97	55 36 10.0 25.7	I 47.455	15 41 11.18	16 47 50.52	16 4157
36	9.0	57.6	59.9	1.8	4.1	6.3	c	40 1.95	56 58 10.0 27.5	III 46.460	15 41 27.32	18 9 38.09	18 4164
37	9.0	38.6	40.4	42.4	44.4	46.6	a	41 12.37	56 58 " "	I 40.660	15 42 37.74	18 7 45.39	17 4427
38	8.0	20.4	22.3	24.4	26.4	28.5	a	42 54.24	56 38 10.0 27.2	I A 38.330	15 44 19.58	17 50 12.45	17 4432
39	9.0	14.4	16.1	18.0	20.0	22.2	a	43 47.96	56 38 " "	I B 40.870	15 45 13.29	17 44 34.97	17 4438
40	7.7	33.2	35.2	37.2	39.1	41.3	a	45 7.09	56 56 10.0 27.6	I 48.340	15 46 32.46	—18 8 9.96	—17 4442
41	8.8	34.7	36.7	38.6	40.7	42.9	a	46 8.53	56 28 10.0 27.3	I 48.400	15 47 33.84	—17 40 9.19	—17 4445
42	4.0	9.2	11.2	13.3	15.2	17.3	a	46 42.85	55 14 10.0 26.2	I 48.630	15 48 8.01	16 26 9.36	16 4174
43	9.2	18.6	20.5	22.5	24.4	26.8	a	48 52.42	56 50 10.0 27.5	I B 45.420	15 50 17.77	17 58 0.29	17 4452
44	9.3	55.8	58.1	0.2	2.2	4.5	c	49 0.17	56 50 " "	III A 41.310	15 50 25.53	18 3 9.20	17 4453
45	7.5	56.1	58.1	0.4	2.6	4.6	c	50 0.37	54 32 10.0 25.9	V 49.950	15 51 25.45	15 44 34.62	15 4221
46	9.6	8.0	10.0	12.2	14.4	16.5	c	51 12.23	57 0 10.0 26.7	III 45.590	15 52 37.61	18 11 16.77	18 4209
47	8.9	36.4	38.4	40.4	42.3	44.7	a	52 10.14	55 48 10.0 26.1	III 48.430	15 53 35.37	17 0 6.70	16 4193
48	9.0	0.6	2.5	4.5	6.3	8.6	a	53 34.24	56 2 10.0 27.0	I 44.995	15 54 59.50	17 13 0.01	17 4468
49	9.0	51.7	53.6	55.5	57.6	59.7	a	55 25.41	56 24 10.0 26.8	I 44.980	15 56 50.72	17 34 59.88	17 4471
50	9.2	22.1	24.0	27.8	30.3	32.5	b_2 c_3	55 32.40	56 24 " "	III A 40.730	15 56 57.71	—17 36 53.89	—17 4474

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
51	9.0	10.4	12.4	14.7	16.9	18.9	c	56 14.67	55 42 10.0 26.0	V	47.375	15 57 39.90	−16 53 46.24	−16 4203
52	9.1	26.2	27.7	31.9	34.0	36.2	b_2 c_3	57 36.23	55 26 10.0 26.5	III	43.720	15 59 1.41	16 36 33.98	16 4209
53	9.0	10.0	12.3	14.1	16.0	18.1	e	6 44.24	56 18 10.0 26.6	VII	44.820	16 8 9.53	17 28 56.69	17 4516
54	8.2	9.1	10.8	12.8	14.7	16.9	a	8 42.31	54 10 10.0 25.8	III	44.230	16 10 7.34	15 20 35.36	15 4283
55	9.0	1.5	3.3	5.3	7.3	9.5	a	11 34.95	55 0 10.0 25.6	I	48.450	16 13 0.07	16 11 54.74	16 4265
56	8.9	59.3	1.2	3.3	5.2	7.4	a	12 32.86	55 0 “ “	I A	46.960	16 13 57.99	16 14 39.19	16 4269
57	9.1	48.2	50.2	52.4	54.7	56.7	c	12 52.45	56 4 10.0 26.3	III	45.600	16 14 17.70	17 15 5.07	17 4542
58	8.7	50.7	53.2	54.9	56.8	58.8	e	13 25.13	55 40 10.0 26.2	VII	43.570	16 14 50.33	16 50 28.10	16 4273
59	9.2	55.7	57.5	59.4	1.4	3.6	a	17 29.04	54 36 10.0 26.4	I	45.860	16 18 54.11	15 47 2.27	15 4319
60	8.7	26.5	28.5	30.7	32.9	35.1	c	17 30.75	56 8 10.0 27.0	III	47.500	16 18 56.02	−17 19 39.83	−17 4563
61	9.0	8.1	10.2	12.1	14.2	16.2	a	20 41.91	56 8 10.0 27.4	III	43.470	16 22 7.17	−17 18 21.94	−17 4574
62	9.0	0.5	2.1	4.0	6.0	8.2	a	21 33.90	56 8 “ “	I B	43.810	16 22 59.16	17 15 13.97	17 4581
63	9.1	30.8	32.5	34.4	36.5	38.6	a	23 4.39	56 36 10.0 27.1	I	45.720	16 24 29.71	17 47 3.10	17 4586
64	5.0	26.4	28.1	30.1	32.0	34.3	a	23 59.79	55 12 10.0 25.6	I	47.870	16 25 24.93	16 23 38.93	16 4298
65	9.4	22.2	24.3	26.4	28.6	30.7	c	27 26.45	55 32 10.0 26.5	III	44.110	16 28 51.63	16 42 29.06	16 4308
66	9.1	20.3	22.2	24.2	26.1	28.1	a	28 53.61	54 2 10.0 25.6	I	44.900	16 30 18.60	15 12 37.15	15 4348
67	8.9	16.3	18.1	20.2	22.1	24.3	a	29 49.89	55 46 10.0 26.3	III	46.730	16 31 15.10	16 57 18.45	16 4315
68	9.0	16.6	18.5	20.9	23.1	25.1	c	30 20.85	57 0 10.0 27.3	III	42.660	16 31 46.21	18 10 4.89	18 4298
69	7.0	10.9	13.0	15.3	17.4	19.6	c	31 15.25	56 50 10.0 28.5	III	46.050	16 32 40.59	18 1 9.11	17 4606
70	7.3	31.4	33.3	35.3	37.2	39.5	a	34 5.18	56 40 10.0 27.2	I	48.490	16 35 30.51	−17 51 51.32	−17 4616
71	6.5	17.7	19.9	22.0	24.2	26.5	c	34 22.07	56 22 10.0 26.0	III	45.450	16 35 47.35	−17 32 53.68	−17 4618
72	9.1	37.2	39.2	41.5	43.6	45.7	c	36 41.45	56 48 10.0 26.9	III	46.320	16 38 6.78	17 59 10.96	17 4624
73	9.2	59.1	1.2	3.4	5.5	7.6	c	39 3.37	56 0 10.0 26.8	III	42.100	16 40 28.60	17 9 47.21	17 4630
74	8.0	46.5	48.2	50.2	52.0	54.3	a	41 19.81	55 2 10.0 26.5	I B	43.520	16 42 44.90	16 8 56.29	16 4350
75	9.0	44.8	46.7	48.5	50.7	52.8	a	42 18.28	55 2 “ “	I A	41.250	16 43 43.39	16 14 38.11	16 4354
76	9.7	58.6	0.5	2.6	4.5	6.6	a	43 32.26	55 50 10.0 26.5	I	44.790	16 44 57.47	17 0 33.98	16 4359
77	7.0	41.2	43.2	45.4	47.7	49.9	c	43 45.49	55 12 10.0 26.5	III	44.480	16 45 10.62	16 22 28.04	16 4360
78	9.5	58.7	0.5	2.3	4.4	6.6	a	45 32.05	54 48 10.0 25.2	I	44.960	16 46 57.12	15 58 32.80	15 4403
79	9.5	42.0	44.2	46.4	48.5	50.7	c	45 46.37	54 48 “ “	III A	45.030	16 47 11.44	16 1 48.94	15 4405
80	9.3	50.7	52.6	54.7	57.1	59.1	c	46 54.85	55 4 10.0 26.0	III	45.040	16 48 19.95	−16 14 36.67	−16 4366
81	9.0	13.1	14.9	16.8	18.8	21.1	a	48 46.76	56 32 10.0 26.4	I A	41.440	16 50 12.06	−17 44 43.09	−17 4659
82	8.9	19.5	21.2	23.1	25.2	27.4	a	49 53.11	56 32 “ “	I A	46.070	16 51 18.40	17 46 10.75	17 4665
83	8.8	50.7	52.9	55.1	57.2	59.4	c	49 55.07	56 32 “ “	III B	44.920	16 51 20.35	17 39 25.12	17 4667
84	8.9	27.2	29.1	30.9	33.1	35.2	a	51 0.91	56 32 “ “	I	43.470	16 52 26.19	17 42 7.51	17 4671
85	9.1	13.5	15.5	17.8	19.7	22.1	c	51 17.73	56 58 10.0 25.3	V A	47.510	16 52 43.08	18 12 41.54	18 4367
86	7.8	25.2	27.3	29.6	31.8	34.0	c	52 29.59	56 58 “ “	V B	45.260	16 53 54.92	18 5 32.75	18 4372
87	9.0	55.4	57.4	59.8	1.9	4.1	c	52 59.73	56 58 “ “	V B	39.700	16 54 25.06	18 3 46.69	17 4677
88	8.7	54.6	56.7	58.7	1.0	3.1	c	53 58.83	56 0 10.0 26.8	V	48.700	16 55 24.04	17 11 47.86	17 4685
89	9.8	59.5	1.8	3.9	6.1	8.1	c	55 3.89	55 4 10.0 26.0	V	43.940	16 56 28.98	16 14 13.72	16 4396
90	9.0	0.8	2.9	5.1	7.1	9.2	c	56 5.03	55 14 10.0 26.1	III	45.370	16 57 30.14	−16 24 40.37	−16 4398
91	8.6	0.1	1.8	3.8	5.7	8.1	a	57 33.74	56 38 10.0 26.7	I	46.470	16 58 59.04	−17 49 2.17	−17 4703
92	9.1	43.3	45.6	47.4	49.4	51.3	e	4 17.42	57 2 10.0 26.8	VII	46.590	17 5 42.76	18 13 7.60	18 4441
93	9.2	22.7	25.0	26.8	28.7	30.8	e	4 57.22	54 30 10.0 26.0	VII	47.710	17 6 22.22	15 41 20.90	15 4480
94	8.8	3.9	6.1	8.1	10.3	12.5	c	7 8.19	56 10 10.0 27.0	V	46.180	17 8 33.41	17 20 54.57	17 4753
95	9.1	23.4	25.6	27.7	30.0	32.2	c	8 27.79	56 54 10.0 27.4	III	43.280	17 9 53.10	18 3 59.53	18 4472
96	9.2	53.8	55.7	57.6	59.6	1.8	a	9 27.57	56 54 “ “	I B	45.610	17 10 52.88	18 1 29.33	17 4758
97	9.0	43.5	45.5	47.7	49.8	52.0	c	9 47.71	56 22 10.0 27.6	V	45.750	17 11 12.95	17 32 46.07	17 4761
98	9.3	52.5	54.0	58.3	0.5	2.7	b_2 c_3	11 2.63	55 24 10.0 26.0	III	44.560	17 12 27.74	16 34 17.61	16 4468
99	8.9	45.8	47.7	49.6	51.7	53.8	a	12 19.59	56 50 10.0 27.3	I	43.740	17 13 44.89	18 0 4.46	17 4771
100	9.4	48.3	50.1	52.1	54.1	56.1	a	13 21.82	55 42 10.0 26.4	I B	42.740	17 14 46.96	−16 48 28.90	−16 4480
101	9.5	40.8	42.9	44.7	46.7	48.9	a	14 14.49	55 42 “ “	I A	40.440	17 15 39.64	−16 54 10.18	−16 4483
102	8.9	36.5	38.2	40.1	42.2	44.3	a	16 10.11	56 42 10.0 27.2	I	45.160	17 17 35.38	17 52 29.29	17 4793
103	9.2	0.4	2.3	4.2	6.1	8.4	a	17 33.90	55 22 10.0 26.1	I B	40.410	17 18 58.98	16 27 41.52	16 4502
104	9.0	44.7	46.4	48.3	50.4	52.5	a	18 18.09	55 22 “ “	I A	41.270	17 19 43.19	16 34 23.04	16 4506
105	8.6	25.9	27.7	29.6	31.5	33.7	a	18 59.38	55 48 10.0 26.5	I	48.670	17 20 24.53	16 59 31.80	16 4512
106	9.0	47.7	49.6	51.4	53.6	55.8	a	21 21.48	56 44 10.0 27.0	I	45.930	17 22 46.75	17 54 41.59	17 4814
107	9.2	56.8	58.5	0.6	2.4	4.6	a	22 30.36	56 18 10.0 27.0	I A	42.200	17 23 55.58	17 30 41.99	17 4822
108	9.2	40.1	41.9	43.9	45.8	47.9	a	23 13.69	56 18 “ “	I B	(40).380	17 24 38.89	17 23 41.55	17 4828
109	9.4	39.7	41.3	43.4	45.2	47.5	a	24 13.29	56 50 10.0 27.6	III	44.150	17 25 38.57	18 0 8.85	17 4835
110	9.7	1.0	2.8	4.7	6.9	......	a	25 34.39	54 40 10.0 25.8	III	49.460	17 26 59.38	−15 51 42.09	15 4587
111	9.0	59.5	1.4	3.7	5.8	8.0	c	26 3.69	56 48 10.0 26.6	V	44.430	17 27 28.97	−17 58 14.39	−17 4843
112	9.6	39.8	41.9	44.0	48.4	50.1	c_3 d_2	27 39.80	56 16 10.0 27.3	V	46.960	17 29 5.00	17 27 0.54	17 4852
113	9.2	50.8	53.0	55.2	59 7	1.2	c_3 d_2	28 50.95	56 4 10.0 26.7	V	45.340	17 30 16.11	17 14 28.27	17 4856
114	9.3	55.0	57.4	59.3	1.2	3.1	e	31 29.24	56 56 10.0 27.5	VII	47.600	17 32 54.52	18 7 14.51	18 4595
115	9.4	48.8	50.2	54.4	56.7	58.8	b_2 c_3	32 58.85	56 56 “ “	III A	47.890	17 34 24.14	18 10 29.45	18 4608
116	9.0	23.2	25.3	27.5	29.8	31.9	c	33 27.55	56 56 “ “	V B	40.760	17 34 52.82	18 1 49.60	18 4612
117	9.4	17.7	20.1	21.9	23.8	25.5	e	33 51.84	56 56	....	....	17 35 17.11	18 5 42	18 4616
118	9.1	49.4	51.5	53.6	56.0	58.0	c	36 53.71	56 32 10.0 27.4	V	43.520	17 38 18.93	17 41 51.67	17 4903
119	9.8	35.5	37.5	39.7	42.1	44.2	c	38 39.81	56 26 10.0 27.5	V	44.880	17 40 5.01	−17 36 16.51	−17 4914

Reduction Elements. Zone 55.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 29.3....	−0.097	−0.391	−0.096	−0.064	−0.354	−0.157
29.5....	−0.032	−0.316	−0.218			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		2 Librae		Mayer 575		*μ* Virginis		*δ* Librae		*η* Ophiuchi		*ξ* Serpentis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		50 4 3.25		58 48 3.50		44 2 2.80		46 56 3.00		54 26 2.80		54 10 3.05	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	45.300	5 38.52	46.180	5 55.04	45.975	5 51.85	46.015	5 52.10	43.900	5 12.38		5 27.34
II	Red. to Mer......	.270	1.70	.140	1.60	.975	1.75	45.960	1.72	.860	1.65	44.710	1.67
VI	Inclination	.090		45.950		.820		.820		.750		.550	0.82
VII	Refraction.......	.060	1 4.9	.920	1 29.7	.755	52.7	.780	58.4	.710	1 16.9	.515	1 16.2

		ν Ophiuchi		*μ* Sagittarii	
		° ′ ″		° ′ ″	
CIRCLE READING.		48 36 3.10		59 54 3.00	
		r	′ ″	r	′ ″
I	Microm. Eq......	44.525	5 23.96		6 23.94
II	Red. to Mer......	.505	1.70		1.59
VI	Inclination	.365		47.595	2.04
VII	Refraction.......	.260	1 2.5	.540	1 35.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
2 Librae............	14 16 37.90	11	−0.42	+67.89	50 10 48.4	46.5
Mayer 575	14 27 47.48	11	−0.40	+67.80	58 55 29.8	45.7
μ Virginis	14 36 23.27	11	−0.43	+67 70	44 8 49.1	46.0
47 H. Cephei S. P....	14 50 49.03	11	+0.48	[+68.01]	297 58	....
δ Librae............	14 54 13.40	11	−0.42	+67.73	47 2 55.2	48.5
η Ophiuchi	17 3 13.59	11	−0.41	+67.58	54 32 33.7	46.4
ξ Serpentis	17 30 26.70	11	0.41	+67.65	54 16 49.1	45.8
ν Ophiuchi	17 52 7.04	11	−0.42	+67.71	48 42 31.3	46.2
δ Ursae Minoris.....	18 5 37.97	9	3.15	[+68.45]	312 20	....
μ Sagittarii	18 6 21.35	11	0.40	+67.61	60 2 5.7	47.5

h s
14.562..........*dt*.......................... +67.780
Hourly rate............ − 0.0465

° ′ ″
Adopted Equator Point..........38 56 46.58

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 20	29.825	83.2	82.7
15 15	29.845	81.4	80.2
16 10	29.845	79.6	78.2
17 8	29.845	77.8	76.4
18 10	29.855	76.3	75.5

Notes.
73. Close double; companion same declination.
111, 117, 119. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0				*D* = Z. D. S. to 1894.0			
			54°	55°	56°	57°	54°	55°	56°	57°
°	s	h m	s	s	s	s	″	″	″	″
54	−0.414	14 30	+17.641	+17.732	+17.821	+17.913	−16.05	−16.36	−16.66	−16.96
55	0.412	15 0	17.671	17.773	17.874	17.979	15.71	15.99	16.26	16.53
56	0.410	15 30	17.689	17.800	17.914	18.029	15.07	15.32	15.56	15.81
57	−0.408	16 0	17.694	17.816	17.936	18.059	14.15	14.36	14.58	14.79
		16 30	17.689	17.816	17.943	18.071	12.98	13.15	13.33	13.51
		17 0	17.671	17.802	17.934	18.067	11.55	11.68	11.82	11.95
		17 30	+17.642	17.775	17.909	18.044	− 9.92	10.01	10.10	10.20
		18 0	......	+17.734	+17.867	+18.001	.....	− 8.14	− 8.19	− 8.24

APPARENT RIGHT ASCENSION.	*R*				
	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″
14 30	74.59	77.37	80.32	83.39	85.00
15 0	74.82	77.61	80.56	83.64	85.25
15 30	75.01	77.80	80.76	83.85	85.47
16 0	75.16	77.96	80.93	84.02	85.64
16 30	75.30	78.11	81.08	84.18	85.80
17 0	75.44	78.25	81.23	84.33	85.96
17 30	75.54	78.36	81.34	84.45	86.08
18 0	75.61	78.43	81.41	84.53	86.16

1894 JULY 6. ZONE 56. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.5	5.5	7.2	9.1	11.0	13.3	[illegible]	56 38.55	53 12 10.0 25.4	III 48.260	14 57 6.78	−14 24 19.30	−14 4095
2	8.4	3.0	5.2	7.3	9.4	11.6	c	58 7.31	53 58 10.0 25.1	III B 38.890	14 58 35.61	15 4 9.82	14 4102
3	8.3	37.7	40.1	41.8	43.9	45.8	e	58 12.36	53 58 " "	VII B 45.550	14 58 40.66	15 6 19 49	14 4105
4	9.1	57.8	59.7	1.5	3.6	5.8	a	0 31.22	54 44 10.0 26.4	III 51.100	15 0 59.60	15 57 16.23	15 4025
5	7.0	30.0	32.1	34.5	36.5	38.8	c	0 34.39	54 44 " "	V B 45.000	15 1 2.76	15 52 9.37	15 4026
6	7.0	23.2	25.3	27.4	29.6	31.8	c	50 27.47	53 20 10.0 24.7	III 48.980	15 50 55.67	14 32 12.48	14 4314
7	6.0	2.9	4.9	7.1	9.2	11.5	c	52 7.13	52 48 10.0 25.0	III 46.680	15 52 35.27	13 59 26.93	13 4302
8	8.8	39.5	41.6	43.8	46.0	48.2	c	0 43.83	54 40 9.6 24.5	V 49.990	16 1 12.19	15 52 32.22	15 4246
9	9.2	37.6	39.7	41.8	44.0	46.2	c	1 41.87	54 40 " "	III 43.760	16 2 10.22	15 50 31.58	15 4251
10	9.2	59.1	0.9	2.8	4.9	7.0	a	2 32.47	54 40 " "	III 40.920	16 3 0.82	−15 49 37.18	−15 4252
11	9.4	46.1	48.2	50.4	52.6	54.8	c	2 50.43	54 40 " "	VI A 47.910	16 3 18.79	−15 55 5.39	−15 4255
12	9.2	16.9	18.8	20.8	22.8	25.0	a	5 50.49	55 22 10.0 26.1	I 44.420	16 6 18.92	16 32 43.47	16 4242
13	9.3	8.0	9.9	11.7	13.9	16.0	a	6 41.31	53 54 10.0 24.7	I 44.340	16 7 9.56	15 4 37.02	14 4368
14	9.1	43.1	44.9	46.8	48.9	51.0	a	7 16.42	54 20 10.0 24.8	I 45.570	16 7 44.72	15 31 1.37	15 4269
15	9.4	44.3	46.0	47.9	50.1	52.3	a	8 17.59	54 20 " "	III B 43.000	16 8 45.88	15 27 1.52	15 4274
16	9.4	17.1	18.9	21.1	23.3	25.6	c	8 21.21	54 20 " "	VI B 49.990	16 8 49.50	15 29 16.82	15 4275
17	8.8	20.0	22.2	24.3	26.5	28.6	c	9 24.33	54 20 " "	V 43.660	16 9 52.63	15 30 27.56	15 4279
18	9.4	44.1	46.3	48.5	50.6	52.7	c	11 48.45	54 8 10.0 24.6	III 44.190	16 12 16.72	15 18 34.39	15 4293
19	8.5	42.9	44.7	46.8	48.6	50.8	a	13 16.20	54 8 " "	I 43.040	16 13 44.47	15 18 10.06	15 4300
20	9.4	18.8	20.8	23.0	25.1	27.4	c	13 23.03	54 8 " "	III 43.270	16 13 51.30	−15 18 16.19	−15 4301
21	8.9	38.9	41.1	43.0	44.8	46.8	e	18 13.46	53 40 10.0 24.7	V 42.620	16 18 41.67	−14 50 2.25	−14 4417
22	9.1	0.0	1.9	3.9	5.6	7.8	a	22 33.27	54 0 10.0 25.1	I 48.400	16 23 1.51	15 11 48.00	15 4325
23	9.2	12.8	14.9	17.0	19.1	21.3	c	23 17.03	53 46 10.0 25.3	III B 38.410	16 23 45.23	14 51 26.54	14 4430
24	9.0	54.9	56.6	58.7	0.7	2.8	a	24 28.14	53 46 " "	III A 45.490	16 24 56.35	15 0 6.17	14 4435
25	8.0	11.2	13.2	15.0	17.0	19.1	a	27 44.41	53 4 10.0 25.3	I 47.070	16 28 12.53	14 15 20.20	14 4444
26	8.7	52.6	54.6	56.8	1.0	2.7	c_3 d_2	27 52.56	54 8 10.0 24.7	V 45.770	16 28 20.81	15 18 59.22	15 4340
27	8.0	42.0	43.7	46.0	47.7	50.0	a	30 15.21	53 16 10.0 24.8	I 43.360	16 30 43.34	14 26 6.71	14 4455
28	8.7	27.9	30.0	32.1	34.2	36.4	c	30 32.13	52 52 10.0 24.2	V 42.280	16 31 0.21	14 1 48.19	13 4458
29	8.9	17.1	19.3	21.4	23.7	25.7	c	34 21.45	54 16 10.0 26.3	V 47.550	16 34 49.71	15 27 31.39	15 4365
30	9.3	58.1	0.1	2.2	4.0	6.0	e	34 32.54	54 16 " "	VII B 40.540	16 35 0.79	−15 22 6.89	−15 4366
31	8.6	42.2	44.1	46.0	48.0	50.2	a	37 15.46	53 30 10.0 25.3	I 45.710	16 37 43.63	−14 40 49.18	−14 4475
32	8.4	25.1	27.1	29.4	31.5	33.7	c	37 29.37	53 56 10.0 24.8	V (B) 44.420	16 37 57.58	15 3 16.44	14 4476
33	9.2	11.7	14.0	15.9	17.7	19.6	e	37 46.27	53 56 " "	V 46.570	16 38 14.49	15 7 9.62	15 4381
34	9.1	29.3	31.2	33.2	35.1	37.3	a	41 2.70	54 20 10.0 25.9	III 43.440	16 41 30.95	15 30 8.55	15 4389
35	9.3	10.0	12.3	14.3	16.7	18.7	c	41 14.41	54 20 " "	III B 44.750	16 41 42.65	15 27 21.08	15 4390
36	9.4	53.5	55.7	57.6	59.5	1.6	e	41 28.03	54 20 " "	VII A 39.910	16 41 56.29	15 32 17.09	15 4391
37	6.8	12.4	14.5	16.5	18.7	20.8	c	43 16.59	54 18 10.0 25.7	V 47.890	16 43 44.84	15 29 33.70	15 4395
38	8.9	18.6	20.7	22.7	24.6	26.6	e	43 53.12	54 4 10.0 24.6	VII 46.660	16 44 21.34	15 15 10.29	15 4397
39	8.6	22.0	23.9	25.7	27.8	30.0	a	45 55.24	53 28 10.0 25.3	III 43.190	16 46 23.37	14 37 59.07	14 4492
40	......	19.6	21.7	24.0	26.0	28.1	c	48 23.89	53 14	....	16 48 51.99	−14 24 55	−14 4499
41	8.7	11.8	13.8	16.0	18.0	20.2	c	52 15.97	53 28 10.0 24.8	V B 50.090	16 52 44.09	−14 36 56.52	−14 4508
42	7.0	57.5	59.8	1.7	3.5	5.4	e	52 32.13	53 28 " "	VII A 48.580	16 53 0.26	14 42 54.37	14 4509
43	8.9	31.7	33.5	35.6	37.4	39.8	a	10 5.15	54 48 10.0 25.2	III 46.980	17 10 33.42	15 59 3.70	15 4501
44	8.7	50.4	52.3	54.2	56.2	58.3	a	11 23.75	54 14 10.0 25.2	I 47.530	17 11 51.93	15 25 10.26	15 4507
45	8.8	58.2	21.7	23.6	25.8	28.0	a_4 c_4	12 25.86	54 42 10.0 25.0	I A 44.240	17 12 54.11	−15 55 22.50	−15 4513

Reduction Elements. Zone 56.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 6.3....	−0.079	−0.163	−0.099	−0.023	0.226	−0.072
6.5....	+0.033	−0.288	−0.046			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	μ Virginis		*η* Librae		*δ* Scorpii		*β* Scorpii pr.		*η* Ophiuchi		*ξ* Ophiuchi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	44 2 4.15		54 10 2.45		61 8 2.60		58 20 3.20		54 26 2.85		59 50 1.35	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.920	5 49.92		5 42.81	47.930	6 27.98	47.465	6 19.90		5 9.81		5 15.04
II Red. to Mer......	.845	1.75		1.66	.820	1.58	.450	1.61		1.65	44.070	1.59
VI Inclination	.710		45.440	2.04	.700		.260		43.690	2.04		0.41
VII Refraction	.640	53.4	.370	1 16.6	.670	1 40.3	.250	1 29.7	.650	1 17.5	43.820	1 35.2

	51 Ophiuchi		*ξ* Serpentis	
	° ′ ″		° ′ ″	
CIRCLE READING.	62 42 2.05		54 10 2.05	
	r	′ ″	r	′ ″
I Microm. Eq......	46.160	5 55.25		5 28.29
II Red. to Mer......	.140	1.56	44.765	1.64
VI Inclination	45.980		.600	0.82
VII Refraction	.955	1 47.2	.560	1 16.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
μ Virginis..........	14 37 19.75	11	−0.24	+10.98	44 8 49.2	46.6
47 H. Cephei S. P.....	14 51 47.32	8	+0.34	[+10.72]	297 58	....
η Librae	15 37 58.48	11	−0.22	+10.80	54 17 5.6	45.4
δ Scorpii	15 53 56.03	11	0.21	+10.70	61 16 12.5	45.2
β Scorpii pr.........	15 59 8.44	11	−0.21	+10.78	58 27 54.4	44.9
ε Ursae Minoris	16 56 47.25	5	−1.02	[+10.59]	316 44	....
η Ophiuchi.........	17 4 10.23	6	−0.22	+10.78	54 32 33.9	46.8
ξ Ophiuchi.........	17 14 31.53	4	−0.21	+10.77	59 56 53.6	46.5
51 Ophiuchi.........	17 24 49.48	5	−0.21	+10.74	62 49 46.1	45.7
ξ Serpentis.........	17 31 23.48	11	−0.22	+10.71	54 16 49.6	46.5

h 15.535............*dt*.................. s +10.815

Hourly rate.......... −0.0366

Adopted Equator Point.......... ° ′ ″ 38 56 45.95

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 40	29.575	72.6	70.8
15 43	29.585	70.8	69.3
16 26	29.585	69.8	68.3
17 6	29.575	69.2	68.1
17 33	29.585	69.3	67.9

Notes.
5,40,45,*ξ* Serpentis. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0					*D* = Z. D. S. to 1894.0				
			52°	53°	54°	55°	56°	52°	53°	54°	55°	56°
°	s	h m	s	s	s	s	s	″	″	″	″	″
52	−0.225	14 30	......	+17.575	+17.663	+17.754	......	......	−15.72	−16.04	−16.37	......
53	0.223	15 0	......	17.581	17.683	17.785	......	......	15.40	15.71	16.02	......
54	0.222	15 30	+17.466	17.576	17.687	17.798	......	−14.53	14.80	15.08	15.36	......
55	0.220	16 0	17.440	17.560	17.678	17.799	+17.920	13.67	13.91	14.17	14.40	14.65
56	−0.218	16 30	17.405	17.530	17.657	17.783	+17.910	12.53	12.74	12.95	13.16	−13.38
		17 0	+17.363	17.490	17.620	17.752	......	−11.14	11.31	11.49	11.67	......
		17 30	......	+17.442	+17.573	+17.706	......	......	− 9.68	− 9.81	− 9.94	......

APPARENT RIGHT ASCENSION.	*R*			
	52° 30′	53° 30′	54° 30′	55° 30′
h m	″	″	″	″
14 30	71.60	74.23	76.98	79.89
15 0	71.70	74.34	77.09	80.00
15 30	71.80	74.44	77.20	80.11
16 0	71.91	74.56	77.32	80.24
16 30	71.99	74.64	77.41	80.33
17 0	72.01	74.66	77.43	80.35
17 30	72.04	74.70	77.46	80.39

1894 JULY 10. ZONE 57. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.8	21.3	23.3	25.6	27.7	29.8	c	8 25.55	54 52 10.0 27.5	V	43.220	15 8 56.78	−16 2 49.94	−15 4060
2	9.0	58.4	0.1	2.0	4.0	6.2	a	16 31.48	53 20 10.0 26.9	I	45.000	15 17 2.55	14 31 13.28	14 4186
3	8.5	54.9	56.9	59.2	1.5	3.6	c	17 59.23	53 50 10.0 28.0	III	48.510	15 18 30.36	15 2 23.10	14 4193
4	8.6	57.3	59.1	1.1	3.1	5.3	a	19 30.59	53 50 “ “	I A	48.530	15 20 1.72	15 5 34.31	14 4199
5	9.0	58.0	0.3	2.3	4.5	6.8	c	20 2.39	53 50 “ “	III B	44.910	15 20 33.51	14 58 1.51	14 4200
6	8.8	2.8	4.5	6.5	8.3	10.6	a	21 35.95	53 50 “ “	I A	43.590	15 22 7.08	15 3 59.51	14 4207
7	.....	58.1	59.9	1.7	3.8	5.9	a	22 31.27	53 50 “ “	I B	37.930	15 23 2.40	14 55 45.99	14 4212
8	6.5	50.4	52.2	54.3	56.2	58.5	a	23 24.03	55 54 10.0 28.0	I	46.410	15 23 55.40	17 5 44.69	16 4093
9	9.6	0.9	3.2	5.3	7.6	9.7	c	24 5.35	55 14 10.0 27.9	V	43.340	15 24 36.64	16 24 47.59	16 4098
10	8.8	24.3	26.0	28.0	30.0	32.0	a	26 57.47	53 52 10.0 26.7	I	46.060	15 27 28.61	−15 3 30.71	−14 4227
11	8.9	35.0	36.8	38.7	40.9	42.9	a	28 8.39	54 40 10.0 26.6	I	49.970	15 28 39.62	−15 52 46.66	−15 4140
12	8.5	14.1	16.0	18.0	19.9	22.0	a	29 47.49	54 28 10.0 27.0	I	42.225	15 30 18.69	15 38 18.28	15 4143
13	8.7	47.9	49.7	51.6	53.6	55.9	a	31 21.20	54 14 10.0 26.9	I	42.500	15 31 52.38	15 24 22.24	15 4146
14	9.1	31.8	33.7	36.1	38.0	40.3	c	31 35.99	54 14 “ “	V B	48.390	15 32 7.16	15 23 5.36	15 4147
15	9.1	16.3	18.4	20.6	24.8	26.3	c_3 d_2	32 16.31	53 42 10.0 27.2	V	43.100	15 32 47.43	14 52 35.59	14 4249
16	8.7	56.3	58.0	0.0	2.1	4.3	a	34 29.75	55 14 10.0 27.5	I	47.120	15 35 1.04	16 25 51.89	16 4135
17	8.8	51.7	53.8	56.0	0.3	1.8	c_3 d_2	38 51.75	53 40 10.0 27.1	V	46.360	15 39 22.86	14 51 34.92	14 4270
18	9.1	22.7	24.9	27.1	29.2	31.3	c	41 27.05	53 8 10.0 27.2	III	44.600	15 41 58.10	14 18 57.50	14 4278
19	9.1	56.1	58.5	0.4	2.2	4.0	e	41 30.86	53 8 “ “	VII	41.920	15 42 1.91	14 18 9.57	14 4279
20	9.2	6.4	8.2	10.1	12.0	14.1	a	43 39.50	53 20 10.0 26.8	I	45.160	15 44 10.57	−14 31 5.78	−14 4288
21	9.2	54.7	56.4	58.3	0.4	2.4	a	45 27.78	53 20 10.0 26.6	I B	46.290	15 45 58.84	−14 28 14.25	−14 4290
22	8.2	25.6	27.6	29.7	31.9	34.0	c	45 29.77	53 20 “ “	III A	43.180	15 46 0.85	14 33 42.14	14 4291
23	8.9	14.6	16.1	18.3	20.2	22.4	a	48 47.88	54 50 10.0 27.0	I A	43.830	15 49 19.13	16 3 55.49	15 4211
24	8.0	59.7	1.6	3.5	5.5	7.6	a	50 33.06	54 22 10.0 27.2	I	42.950	15 51 4.25	15 32 23.72	15 4217
25	9.1	44.2	46.2	48.4	50.6	52.6	c	50 48.41	53 56 10.0 27.1	III B	40.670	15 51 19.54	15 2 28.59	14 4316
26	7.9	32.1	33.9	35.9	37.9	40.0	a	52 5.39	53 56 “ “	III A	48.450	15 52 36.53	15 11 21.51	15 4226
27	8.8	18.9	21.0	23.1	25.1	27.4	c	52 23.11	53 46 10.0 27.4	V	45.040	15 52 54.23	14 57 4.78	14 4323
28	9.0	0.7	2.3	4.5	6.4	8.5	a	54 33.90	53 56 10.0 27.1	I	47.740	15 55 5.05	15 7 52.10	15 4230
29	9.2	53.2	55.1	57.0	59.0	1.3	a	55 26.51	53 46 10.0 26.9	I	43.180	15 55 57.63	14 56 24.42	14 4334
30	9.2	3.8	5.7	7.7	9.6	11.8	a	56 37.45	55 58 10.0 27.6	I	44.940	15 57 8.84	−17 9 3.63	−17 4476
31	8.7	0.1	1.9	3.8	5.9	8.0	a	58 33.30	53 26 10.0 26.9	I	48.780	15 59 4.38	−14 38 8.91	−14 4341
32	8.7	22.9	24.6	26.6	28.5	30.7	a	59 56.09	54 0 10.0 27.0	I	47.760	16 0 27.24	15 11 50.38	15 4243
33	8.6	56.3	57.9	0.0	2.0	3.9	a	1 29.47	54 12 10.0 27.0	I	42.940	16 2 0.64	15 22 18.52	15 4250
34	9.0	35.1	36.9	38.8	40.7	42.9	a	3 8.59	55 52 10.0 27.2	I A	41.360	16 3 39.97	17 5 5.52	16 4228
35	9.2	5.8	8.0	10.2	12.5	14.6	c	3 10.23	55 52 “ “	III B	44.430	16 3 41.60	16 59 40.25	16 4229
36	8.0	27.8	29.4	31.4	33.4	35.5	a	7 0.89	53 40 10.0 27.3	I	47.220	16 7 31.99	14 51 36.46	14 4370
37	8.7	29.1	30.8	32.9	34.9	37.0	a	8 2.53	55 6 10.0 27.7	I	45.690	16 8 33.81	16 16 10.84	16 4252
38	9.3	25.4	27.0	28.9	30.9	33.2	a	8 58.51	53 58 10.0 26.4	I	48.700	16 9 29.65	15 10 4.12	15 4278
39	9.2	58.8	0.6	2.6	4.5	6.7	a	9 32.07	53 58 “ “	I A	43.740	16 10 3.21	15 11 42.69	15 4282
40	9.0	29.2	31.0	32.9	34.8	37.1	a	11 2.38	53 38 10.0 25.8	I	44.280	16 11 33.47	−14 48 37.97	−14 4388
41	9.3	43.0	44.8	46.8	48.8	51.0	a	18 16.36	54 22 10.0 27.4	I	43.380	16 18 47.54	−15 32 20.45	−15 4318
42	6.8	28.9	30.7	32.6	34.6	36.8	a	22 2.27	54 48 10.0 27.0	I	46.410	16 22 33.50	15 59 17.44	15 4324
43	9.5	46.9	48.7	50.5	52.5	54.8	a	23 20.22	54 48 “ “	I B	46.600	16 23 51.44	15 56 8.25	15 4327
44	9.1	6.4	8.1	10.2	12.2	14.4	a	24 39.61	53 22 10.0 26.6	I	48.290	16 25 10.66	14 33 48.23	14 4437
45	9.3	54.5	56.1	58.1	0.2	2.5	a	27 27.69	53 54 10.0 26.9	I	45.640	16 27 58.81	15 4 58.06	14 4442
46	7.9	23.4	25.7	27.8	30.0	32.1	c	27 27.81	53 38 10.0 26.8	III	44.460	16 27 58.89	14 48 36.69	14 4443
47	9.4	18.3	20.1	22.1	24.0	26.3	a	29 51.68	54 42 10.0 27.4	III	45.130	16 30 22.90	15 52 51.46	15 4349
48	9.5	21.3	23.2	25.1	27.1	29.3	a	30 54.66	54 14 10.0 27.0	III	43.910	16 31 25.82	15 24 26.34	15 4354
49	9.3	16.0	17.7	19.8	21.7	23.9	a	31 49.15	53 14 10.0 26.9	III	47.890	16 32 20.18	14 25 39.12	14 4460
50	7.8	3.0	5.1	7.2	9.3	11.5	c	32 7.23	53 14 “ “	III A	47.590	16 32 38.26	−14 28 46.34	−14 4463
51	8.0	17.3	19.0	21.0	22.9	25.1	a	34 50.49	54 0 10.0 27.0	I	41.730	16 35 21.61	−15 9 40.72	−15 4369
52	9.0	50.5	52.4	54.5	56.4	58.5	a	35 23.76	53 4 10.0 27.1	I	45.070	16 35 54.76	14 14 41.76	14 4472
53	7.7	57.7	59.8	1.9	4.0	6.5	c	42 1.99	54 0 10.0 26.8	III	45.820	16 42 33.10	15 10 57.14	15 4393
54	8.8	1.8	3.8	6.0	8.2	10.3	(c)	43 6.03	55 24 10.0 27.5	V	48.220	16 43 37.32	16 35 48.10	16 4353
55	9.3	27.2	29.0	31.0	32.9	35.2	a	46 0.57	54 32 10.0 27.5	I	45.555	16 46 31.75	15 42 50.23	15 4401
56	9.4	3.7	5.6	7.6	9.5	11.8	a	46 37.12	54 22 10.0 27.2	I	44.070	16 47 8.27	15 32 21.11	15 4404
57	9.1	47.9	49.8	51.6	53.7	55.9	a	48 21.11	53 14 10.0 26.6	I	46.080	16 48 52.12	14 24 55.38	14 4499
58	9.4	56.6	58.2	0.3	2.2	4.4	a	50 29.69	53 28 10.0 27.0	I B	42.370	16 51 0.71	14 34 32.37	14 4504
59	9.3	16.2	18.0	19.9	21.9	24.0	a	51 49.36	53 28 “ “	I A	41.170	16 52 20.39	14 40 34.36	14 4506
60	9.0	39.9	41.9	43.8	45.7	48.0	a	52 13.21	53 28 “ “	III B	49.930	16 52 44.23	−14 36 57.20	−14 4508
61	6.0	25.1	27.0	29.1	31.4	33.7	c	52 29.27	53 28 “ “	V A	48.360	16 53 0.31	14 42 54.11	−14 4509
62	9.0	5.0	7.1	9.4	11.6	13.5	c	53 9.33	53 28 “ “	V B	43.680	16 53 40.35	14 34 59.40	14 4512
63	9.0	27.8	29.8	31.8	34.0	36.1	c	54 31.91	54 20 10.0 27.8	V	48.600	16 55 3.05	15 31 47.44	15 4425
64	9.4	15.6	17.3	19.2	21.1	23.4	a	55 48.79	54 20 “ “	III B	40.300	16 56 19.91	15 25 54.96	15 4429
65	9.2	40.6	42.2	44.1	46.1	48.3	a	57 13.74	54 20 “ “	III A	41.150	16 57 44.88	15 32 35.90	15 4437
66	8.5	12.0	14.6	16.7	18.9	21.1	c	58 16.67	52(44) 10.0 27.4	V	46.990	16 58 47.60	13 55 10.81	13 4536
67	8.5	49.4	51.6	53.8	56.0	58.0	c	58 53.77	52 52 10.0 27.6	V	42.250	16 59 24.72	−14 1 40.76	−13 4540

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
68	8.9	36.4	38.7	40.9	43.0	45.2	c	0 40.85	55 24 10.0 27.8	III	46.100	17 1 12.13	−16 34 58.41	−16 441
69	9.1	26.7	28.5	30.6	32.5	34.6	a	1 59.86	52 56 10.0 28.0	III	46.900	17 2 30.81	14 7 6.61	14 455
70	7.9	26.3	28.0	30.0	32.0	34.1	a	2 59.51	53 58 10.0 27.7	I A	43.540	17 3 30.60	−15 11 16.07	-15 446
71	9.3	2.3	4.3	6.5	8.6	10.8	c	3 6.51	53 58 “ “	III B	42.110	17 3 37.59	−15 4 25.11	−15 446
72	9.2	0.2	1.8	3.9	5.9	8.0	a	4 33.40	54 6 10.0 27.6	III	47.835	17 5 4.50	15 17 26.02	15 446
73	9.1	48.3	50.4	52.6	54.6	56.8	c	4 52.55	54 20 10.0 27.9	V	49.810	17 5 23.68	15 32 5.87	15 447
74	9.1	29.6	32.0	33.8	35.7	37.7	e	5 4.21	54 20 “ “	VII B	51.500	17 5 35.34	15 29 26.96	15 447
75	9.1	13.7	15.9	18.2	20.1	22.3	c	6 18.05	54 20 “ “	III B	50.450	17 6 49.17	15 29 3.47	15 448
76	9.1	41.4	43.4	45.1	47.1	49.4	a	7 14.76	54 20 “ “	III	44.210	17 7 45.88	15 30 16.59	15 448
77	6.3	18.0	20.0	22.2	24.4	26.6	c	7 22.25	54 20 “ “	V B	42.270	17 7 53.37	15 26 28.84	15 448
78	9.0	42.2	44.2	46.5	50.7	......	c_3 d_1	7 42.17	54 20 “ “	V	39.460	17 8 13.29	15 28 47.59	15 449
79	7.7	27.9	30.0	32.0	33.9	35.8	e	8 2.37	54 20 “ “	VII	41.780	17 8 33.49	15 29 33.04	15 449
80	9.3	34.0	36.0	38.3	40.4	42.6	c	9 38.27	54 20 “ “	V B	47.040	17 10 9.38	−15 27 58.62	−15 449
81	8.9	32.0	34.1	36.3	38.5	40.6	c	10 36.31	55 16 10.0 28.4	V	44.150	17 11 7.55	−16 26 18.39	−16 446
82	9.4	23.8	25.5	27.7	29.6	31.8	a	12 57.21	54 38 10.0 27.0	I	44.530	17 13 28.36	15 48 18.63	15 451
83	9.1	45.2	47.0	48.9	51.0	53.1	a	14 18.49	54 10 10.0 26.8	I	47.280	17 14 49.58	15 21 9.01	15 451
84	8.8	24.7	26.5	28.4	30.4	32.5	a	14 57.99	54 24 10.0 27.6	I	44.860	17 15 29.11	15 34 23.67	15 452
85	8.4	9.8	11.7	13.7	15.5	17.7	a	15 43.08	53 46 10.0 27.5	I	47.460	17 16 14.12	14 57 11.09	14 461
86	8.9	42.5	44.4	46.3	48.0	50.4	a	16 15.58	52 44 10.0 27.0	III	47.960	17 16 46.48	13 55 19.31	13 459
87	9.4	19.0	20.7	22.7	24.6	26.7	a	18 52.08	53 24 10.0 27.0	I (B)	46.020	17 19 23.05	14 31 28.83	14 462
88	9.0	28.1	29.8	31.9	33.7	35.9	a	20 1.23	53 24 “ “	I A	41.310	17 20 32.31	14 36 24.11	14 463
89	8.1	22.9	24.5	26.5	28.4	30.6	a	22 55.85	52 50 10.0 27.5	I	43.775	17 23 26.75	13 59 55.31	13 4627
90	9.1	13.1	14.9	16.9	18.9	21.0	a	23 46.30	53 18 10.0 27.2	I	45.740	17 24 17.26	−14 28 33.34	−14 466
91	8.0	24.6	26.6	28.9	31.0	33.1	c	24 28.85	53 10 10.0 27.0	III	43.300	17 24 59.79	−14 19 47.88	−14 4667
92	9.1	51.1	53.2	55.4	57.6	59.8	c	24 55.43	53 10 “ “	V B	44.630	17 25 26.36	14 17 2.31	14 467
93	8.7	56.7	58.6	0.6	2.5	4.7	a	27 29.94	53 10 10.0 27.2	I	49.290	17 28 0.88	14 21 38.89	14 468
94	9.0	29.5	31.7	33.9	36.0	37.9	c	27 33.81	52 44 10.0 27.2	V	47.030	17 28 4.69	13 54 58.16	13 4651
95	9.0	43.8	45.6	47.5	49.5	51.7	a	29 16.88	52 48 10.0 27.5	I B	47.125	17 29 47.75	13 55 43.85	13 466
96	8.9	17.2	19.1	21.0	23.1	25.2	a	29 50.38	52 48 “ “	I B	42.700	17 30 21.25	13 54 19.37	13 467
97	8.3	51.9	53.8	55.8	57.7	59.9	a	30 25.09	52 48 “ “	I	43.990	17 30 55.97	13 57 55.88	13 467
98	8.3	28.8	30.5	32.3	34.4	36.5	a	31 1.76	52 48 “ “	I B	48.975	17 31 32.63	13 56 18.25	13 468
99	8.0	39.1	40.8	42.8	44.6	46.9	a	32 12.12	52 48 “ “	I A	48.960	17 32 43.01	14 2 42.86	14 4707
100	9.2	44.5	46.4	48.1	50.2	52.4	a	35 17.65	53 14 10.0 26.4	I	44.490	17 35 48.58	−14 24 3.72	−14 4726
101	7.7	21.0	22.7	24.7	26.6	28.9	a	35 54.04	52 44 10.0 26.3	I	42.370	17 36 24.91	−13 53 21.77	−13 471
102	6.8	51.3	53.1	55.1	57.1	59.2	a	36 24.64	54 20 10.0 26.8	III	45.900	17 36 55.72	15 30 34.95	15 4655
103	7.9	19.4	21.2	23.3	25.1	27.4	a	39 52.91	55 22 10.0 27.8	I	47.110	17 40 24.12	16 32 57.99	16 461
104	9.0	19.5	21.4	23.3	25.3	27.3	a	40 52.84	54 18 10.0 27.3	I	45.680	17 41 23.90	15 28 27.09	15 467
105	8.0	34.0	35.8	37.7	39.6	41.8	a	44 7.32	54 46 10.0 27.1	I	45.610	17 44 38.44	15 56 25.45	15 469
106	9.0	41.1	42.8	44.8	46.7	48.9	a	45 14.33	54 18 10.0 27.0	I	42.040	17 45 45.38	15 27 15.67	15 469
107	9.0	7.6	9.5	11.4	13.4	15.5	a	45 40.96	54 18 “ “	I	44.980	17 46 12.01	15 28 11.41	15 470
108	8.8	20.9	22.4	26.6	28.8	31.0	b_2 c_3	54 30.94	54 10 10.0 26.6	III B	42.400	17 55 1.94	15 16 7.22	15 476
109	9.0	51.5	53.0	57.1	59.3	1.5	b_2 c_3	55 1.48	54 10 “ “	III A	38.830	17 55 32.49	15 21 24.45	15 4775
110	9.6	39.4	41.3	43.5	45.7	47.9	c	55 43.57	54 10 “ “	V	44.430	17 56 14.58	−15 19 59.28	-15 478
111	8.0	54.5	56.4	58.3	0.2	2.5	a	58 27.83	54 10 “ “	I A	40.920	17 58 58.84	−15 22 0.97	-15 480
112	8.1	38.0	40.2	42.5	44.6	46.7	c	58 42.41	54 10 “ “	III B	47.020	17 59 13.41	15 17 33.24	15 480
113	9.5	47.5	49.1	53.2	55.4	57.6	b_2 c_3	59 57.55	53 54 10.0 26.8	III	42.550	18 0 28.51	15 3 19.28	15 481
114	9.2	18.2	20.2	22.5	24.5	26.6	c	0 22.41	53 34 10.0 27.0	V	43.690	18 0 53.33	14 43 41.63	14 4885
115	8.9	22.7	24.8	27.0	29.1	31.2	c	1 26.97	54 52 10.0 27.5	V	48.190	18 1 58.06	16 3 10.62	16 4716
116	9.0	9.9	12.0	14.0	16.0	17.9	e	1 44.34	54 52 “ “	V B	43.180	18 2 15.42	15 58 22.73	15 482
117	9.5	17.6	19.3	21.2	23.1	25.3	a	10 50.55	52 42 10.0 27.7	I	45.870	18 11 21.34	13 52 12.99	13 490
118	9.1	52.0	53.8	55.5	57.7	59.5	a	12 24.95	52 42 “ “	I B	48.720	18 12 55.73	13 49 54.31	13 4925
119	9.0	21.1	23.1	25.2	27.4	29.7	c	12 25.31	52 42 “ “	V B	50.010	18 12 56.09	13 50 22.15	13 492
120	9.1	10.3	12.6	14.6	16.5	18.4	e	12 45.15	52 42 “ “	VII B	51.550	18 13 15.93	−13 50 52.69	−13 4932
121	9.1	18.5	20.5	22.8	25.0	27.0	c	14 22.77	52 50 10.0 27.8	V	44.660	18 14 53.57	−13 59 52.22	−14 5005
122	9.0	3.5	5.4	7.7	9.9	12.0	c	15 7.71	52 40 10.0 27.6	V	44.720	18 15 38.48	13 49 52.48	13 4947
123	9.0	21.1	23.0	24.9	26.8	29.0	a	16 54.46	54 30 10.0 27.7	I	43.720	18 17 25.47	15 39 34.17	15 4952
124	8.9	50.9	52.8	54.6	56.7	58.9	a	18 24.25	54 16 10.0 27.4	I	47.390	18 18 55.23	15 26 42.56	15 4959
125	9.2	31.4	33.3	35.3	37.1	39.3	a	19 4.91	55 24 10.0 27.8	III	44.170	18 19 36.03	16 33 46.21	16 486
126	8.5	13.0	14.8	16.8	18.8	21.0	a	20 46.14	52 44 10.0 26.5	I	47.920	18 21 16.91	13 54 47.03	13 4981
127	7.7	11.6	13.7	15.9	18.1	20.3	c	21 15.93	54 16 10.0 27.5	III	45.280	18 21 46.89	−15 26 2.99	−15 4972

Reduction Elements. Zone 57.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 10.3....	−0.070	−0.292	−0.383	−0.042	−0.292	−0.332
10.5....	0.013	−0.291	−0.282			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	γ Scorpii		β Librae		η Librae		Mayer 703		ν Ophiuchi		μ Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	63 40 3.80		47 50 3.75		54 10 3.70		57 36 3.90		48 36 3.75		59 54 3.70	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	49.510	6 57.92	44.255	5 18.96	45.360	5 39.73	47.270	6 16.00	44.250	5 18.48	.	6 16.94
II Red. to Mer.	.430	1.55	.225	1.71	.345	1.66	.230	1.62	.190	1.70		1.59
VI Inclination	.250		.080		.155		.050		.065		47.210	2.04
VII Refraction	.230	1 52.2	.050	1 1.5	.115	1 17.2	.050	1 28.5	.000	1 3.8	.190	1 37.0

	2 H. Scuti	
	° ′ ″	
CIRCLE READING.	53 28 3.65	
	r	′ ″
I Microm. Eq.	44.670	5 26.36
II Red. to Mer.	.630	1.66
VI Inclination	.450	
VII Refraction	.415	1 16.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Scorpii	14 57 40.75	11	−0.52	+13.94	63 48 55.5	42.1
48 H. Cephei S. P.	15 6 38.08	11	−0.58	[+13.74]	296 18	....
β Librae	15 11 6.90	11	−0.49	+13.98	47 56 25.9	42.8
η Librae	15 37 55.73	11	−0.50	+13.79	54 17 2.3	42.3
Mayer 703	17 49 30.61	11	−0.50	+13.88	57 43 50.0	42.3
ν Ophiuchi	17 53 0.98	11	−0.49	+13.91	48 42 27.7	43.4
δ Ursae Minoris	18 6 28.14	7	−0.12	[+13.29]	312 20	....
μ Sagittarii	18 7 15.15	11	−0.51	+14.01	60 2 1.3	43.2
2 H. Scuti	18 22 58.96	11	−0.50	+14.02	53 34 47.7	42.9

h		s
15.260	*dt*	+13.903
	Hourly rate	+ 0.0186

Adopted Equator Point .... 38° 56′ 42.71″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
15 0	29.905	72.9	72.4
15 35	29.905	71.9	71.2
16 30	29.905	70.0	69.1
17 26	29.905	68.8	67.4
18 25	29.895	67.0	65.8

Notes.

17. Faint companion, n. p.

125. Suspected close double.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. S. to 1894.0				
			52°	53°	54°	55°	56°	52°	53°	54°	55°	56°
°	s	h m	s	s	s	s	s	″	″	″	″	″
52	−0.497	15 0	......	+17.630	+17.732	+17.833	+17.937	.....	−15.22	−15.53	−15.84	−16.16
53	0.498	15 30	......	17.618	17.730	17.842	17.955	.....	14.62	14.91	15.20	15.50
54	0.500	16 0	......	17.596	17.714	17.836	17.956	.....	13.74	14.00	14.27	14.53
55	0.501	16 30	+17.434	17.557	17.684	17.810	17.938	−12.34	12.58	12.80	13.04	13.26
56	−0.503	17 0	17.381	17.509	17.639	17.769	17.901	10.97	11.17	11.36	11.56	11.75
		17 30	17.320	17.450	17.580	17.714	17.846	9.35	9.50	9.67	9.82	9.97
		18 0	17.252	17.381	17.511	17.644	17.776	7.53	7.65	7.76	7.87	7.99
		18 30	+17.175	+17.303	+17.432	+17.559	+17.689	− 5.55	− 5.62	− 5.68	− 5.76	− 5.83

APPARENT RIGHT ASCENSION.	*R*				
	52° 30′	53°	54°	55°	56°
h m	″	″	″	″	″
15 0	72.21	73.52	76.24	79.09	82.09
15 30	72.34	73.65	76.38	79.23	82.24
16 0	72.51	73.82	76.56	79.41	82.43
16 30	72.68	73.99	76.74	79.60	82.62
17 0	72.81	74.13	76.88	79.74	82.78
17 30	72.93	74.25	77.00	79.87	82.91
18 0	73.03	74.35	77.11	79.98	83.02
18 30	73.15	74.47	77.23	80.11	83.16

1894 JULY 12. ZONE 58. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	......	8.1	9.9	12.0	13.9	16.0	a	0 41.54	54 54 10.0 24.0	I 46.650	15 1 14.01	−16 5 48.87	−15 4028
2	.....	8.8	10.5	12.5	14.5	16.7	a	5 42.12	54 36 10.0 24.5	I 43.725	15 6 14.56	15 46 50.92	15 4047
3	......	8.1	10.3	12.5	14.7	16.8	c	6 12.49	54 50 10.0 24.5	III 47.350	15 6 44.96	16 2 2.14	15 4048
4	......	48.9	50.6	52.5	54.5	56.7	a	8 22.41	56 12 10.0 26.4	I 46.150	15 8 55.03	17 23 41.24	17 4285
5	......	6.6	8.4	10.3	12.3	14.5	a	9 39.74	53 6 10.0 24.3	I (51).550	15 10 12.03	14 19 14.78	14 4160
6	8.9	20.8	22.7	24.7	26.6	28.7	a	10 54.00	53 6 “ “	I B 44.380	15 11 26.28	14 13 45.62	14 4165
7	8.9	44.7	46.5	48.5	50.4	52.5	a	18 18.16	55 26 10.0 26.3	I 48.750	15 18 50.71	16 38 25.02	16 4076
8	8.9	14.0	16.2	18.3	20.5	22.8	c	18 18.37	55 26 “ “	III 46.960	15 18 50.92	16 37 52.79	16 4076
9	7.3	56.7	58.5	0.4	2.3	4.6	a	22 29.95	54 10 10.0 24.0	I 45.520	15 23 2.36	15 21 17.64	15 4118
10	9.2	3.7	5.5	7.6	9.5	11.7	a	26 37.37	56 14 10.0 26.3	I 45.440	15 27 10.01	−17 25 21.05	−17 4362
11	8.0	43.4	45.5	47.8	50.0	52.0	c	26 47.75	55 42 10.0 26.1	V 48.920	15 27 20.33	−16 54 29.15	−16 4111
12	9.0	34.0	35.7	37.8	39.7	41.9	a	32 7.27	54 8 10.0 24.8	I 45.695	15 32 39.67	15 19 17.62	15 4150
13	9.2	6.1	8.0	9.9	11.9	14.1	a	34 39.70	55 50 10.0 26.0	I B 46.830	15 35 12.30	16 58 30.93	16 4138
14	9.1	23.0	24.8	26.8	28.8	31.0	a	35 56.59	55 50 “ “	I A 41.650	15 36 29.20	17 3 17.29	16 4144
15	8.6	26.7	28.5	30.3	32.3	34.5	a	37 59.95	54 24 10.0 25.6	I 44.325	15 38 32.39	15 34 50.31	15 4173
16	8.9	48.7	50.5	52.4	54.3	56.4	a	42 21.90	54 0 9.5 24.4	I A 43.380	15 42 54.30	15 13 41.97	15 4192
17	9.1	14.0	15.7	17.6	19.5	21.8	a	42 47.14	54 0 “ “	III B 41.270	15 43 19.52	15 6 37.97	14 4284
18	6.8	32.0	34.2	36.4	38.6	40.7	c	43 36.39	56 24 10.0 26.5	III 47.010	15 44 9.06	17 35 46.74	17 4431
19	9.0	38.1	40.3	42.2	44.1	46.1	e	44 12.34	56 4 10.0 25.5	VII 48.590	15 44 44.98	17 16 18.22	17 4436
20	9.0	35.1	37.0	38.9	40.9	43.0	a	46 8.67	55 44 10.0 26.0	I 47.900	15 46 41.27	−16 55 58.78	−16 4169
21	8.7	49.2	50.8	54.9	56.9	59.1	$b_2\ c_3$	47 59.18	54 10 10.0 25.3	III 48.190	15 48 31.59	−15 22 0.99	−15 4209
22	9.2	39.7	41.4	43.6	45.6	47.8	a	49 13.31	55 46 10.0 25.6	I 46.990	15 49 45.91	16 57 40.09	16 4177
23	9.0	33.2	35.1	36.9	39.0	41.1	a	50 6.68	55 16 10.0 24.9	I 49.250	15 50 39.22	16 28 21.12	16 4178
24	8.8	13.6	15.0	19.1	21.5	23.5	$b_2\ c_3$	50 23.56	55 16 “ “	III B 40.800	15 50 56.09	16 22 29.65	16 4179
25	8.9	51.7	54.0	55.9	57.8	59.6	e	50 26.10	55 16 “ “	VII A 50.360	15 50 58.65	16 31 59.83	16 4180
26	8.6	23.0	25.0	27.2	29.4	31.5	c	51 27.23	55 16 “ “	V A 48.180	15 51 59.78	16 31 16.62	16 4183
27	......	37.3	39.1	40.9	43.0	45.2	a	54 10.68	55 8 10.0 24.5	I B 40.390	15 54 43.19	16 14 18.03	16 4196
28	9.0	12.0	14.1	16.2	18.4	20.5	c	54 16.25	55 8 “ “	V A 45.310	15 54 48.78	16 22 20.31	16 4197
29	9.4	30.3	32.3	36.6	38.2	41.0	$c_4\ d_3$	0 28.11	55 4 10.0 25.6	VI 49.730	16 1 0.63	16 16 30.02	16 4218
30	9.1	27.8	30.0	32.0	36.4	38.0	$c_3\ d_2$	1 27.84	55 4 “ “	VI 44.550	16 2 0.36	−16 14 51.02	−16 4220
31	9.0	3.6	5.5	7.4	9.2	11.5	a	6 36.96	54 34 10.8 26.3	I 47.205	16 7 9.41	−15 45 34.68	−15 4266
32	9.1	21.7	23.5	25.5	27.4	29.5	a	7 55.25	55 58 10.0 25.0	I 47.870	16 8 27.88	17 9 49.43	17 4519
33	8.6	6.8	8.7	10.7	12.8	14.9	a	9 40.27	54 28 10.0 24.8	I 42.850	16 10 12.71	15 38 9.12	15 4284
34	7.6	52.0	53.9	55.8	57.9	0.0	a	22 25.75	56 34 10.0 26.1	I 47.840	16 22 58.45	17 45 43.92	17 4580
35	9.2	40.5	42.8	46.9	48.5	51.3	$c_4\ d_3$	22 38.40	55 46 10.0 24.6	VI 44.850	16 23 11.00	16 56 49.16	16 4288
36	9.1	53.2	55.1	57.3	59.5	1.8	c	27 57.39	55 46 9.5 24.2	III 45.820	16 28 29.98	16 57 2.52	16 4307
37	9.0	30.0	32.0	33.8	36.0	38.2	a	31 3.74	56 4 10.0 26.5	I 46.840	16 31 36.37	17 15 20.98	17 4604
38	8.8	2.0	3.8	5.5	7.5	9.7	a	34 35.27	55 0 10.0 25.8	I 44.750	16 35 7.76	16 10 36.47	16 4326
39	8.4	......	......	......	......	......	......	....	55 0 “ “	I 43.610	16 36 5	16 10 14.31	16 4328
40	8.3	......	......	......	......	......	......	....	56 18 10.0 25.5	I B 42.260	16 40 46	−17 24 37.70	−17 4631
41	9.2	......	......	......	......	......	......	....	56 18 “ “	III A 45.700	16 40 49	−17 32 10.36	−17 4632
42	9.4	37.3	39.3	41.0	43.0	45.3	a	49 10.71	54 40 10.0 24.4	I A 41.465	16 49 43.15	15 52 39.12	15 4408
43	8.9	51.2	53.0	55.0	56.9	59.1	a	50 24.56	54 40 “ “	I B 44.070	16 50 56.98	15 47 2.70	15 4412
44	9.3	34.6	36.6	38.7	40.9	43.0	c	50 38.77	54 12 10.0 25.0	V 44.110	16 51 11.14	15 22 18.14	15 4414
45	7.8	33.2	35.0	37.0	38.9	41.0	a	53 6.56	54 48 10.5 26.0	III B 42.910	16 53 39.00	15 54 42.55	15 4421
46	8.6	11.9	13.7	15.7	17.6	19.8	a	53 45.29	54 48 “ “	I 45.960	16 54 17.73	15 58 50.82	15 4424
47	9.0	9.7	11.4	13.4	15.3	17.6	a	54 43.04	54 48 “ “	I A 50.130	16 55 15.49	16 3 22.99	15 4427
48	9.1	34.2	35.9	37.9	39.8	42.0	a	56 7.51	54 48 “ “	I 50.960	16 56 39.95	16 0 24.95	15 4431
49	8.5	14.0	15.8	17.9	20.0	22.0	a	57 47.50	54 52 10.0 25.1	I 46.920	16 58 19.95	16 3 6.78	15 4439
50	9.1	10.0	12.0	14.1	16.4	18.5	c	58 14.21	55 30 9.2 24.5	III (B) 46.270	16 58 46.73	−16 37 44.73	−16 4410
51	9.0	47.0	49.4	51.2	52.9	55.1	e	58 21.38	55 30 “ “	VII A 42.150	16 58 53.91	−16 42 54.49	−16 4412
52	6.0	49.5	51.6	53.8	56.0	58.2	c	1 53.83	56 18 10.0 25.7	III 45.060	17 2 26.46	17 28 35.62	17 4717
53	8.9	10.0	11.8	13.8	15.8	18.0	a	2 43.65	56 18 “ “	III B 48.200	17 3 16.28	17 26 22.70	17 4724
54	9.0	4.8	6.9	8.5	10.7	12.8	a	3 38.59	56 46 10.0 26.2	III B 44.645	17 4 11.28	17 53 16.22	17 4731
55	9.5	10.0	11.9	13.9	15.8	18.0	a	4 43.79	56 46 “ “	I A 52.150	17 5 16.50	18 2 2.34	17 4737
56	9.0	15.0	17.2	19.0	20.9	23.0	e	4 49.15	56 22 10.0 26.3	V 52.740	17 5 21.79	17 35 2.63	17 4738
57	8.6	57.2	58.7	3.0	5.1	7.4	$b_2\ c_3$	6 7.33	56 22 “ “	III B 43.690	17 6 39.96	17 28 55.82	17 4744
58	8.9	20.5	22.4	24.5	28.9	30.6	$c_3\ d_2$	6 20.34	56 22 “ “	V B 41.620	17 6 52.97	17 28 17.89	17 4746
59	8.8	42.4	44.4	46.1	48.3	50.6	a	8 15.89	54 40 10.0 24.4	I 44.890	17 8 48.30	15 50 22.53	15 4492
60	8.9	15.6	16.9	21.3	23.4	25.6	$b_2\ c_3$	8 25.57	54 40 “ “	III B 47.030	17 8 57.97	−15 47 52.72	−15 4493
61	9.0	5.1	6.9	9.0	10.8	13.0	a	9 38.61	55 30 10.0 26.1	III 47.800	17 10 11.13	−16 41 22.26	−16 4459
62	8.0	50.1	52.1	54.1	56.3	9.3	$a_2\ b_1$	10 22.04	56 38 10.0 25.7	III 43.790	17 10 54.71	17 48 8.65	17 4759
63	9.0	34.0	35.9	38.1	40.2	42.5	c	10 38.15	56 38 “ “	III A 46.140	17 11 10.82	17 52 6.36	17 4760
64	7.2	56.7	58.9	1.0	3.1	5.4	c	12 1.03	54 28 10.0 25.0	V A 44.120	17 12 33.41	15 41 22.38	15 4511
65	9.5	27.8	29.6	31.6	33.6	35.8	a	12 1.18	54 28 “ “	III 45.710	17 12 33.56	15 38 38.04	15 4510
66	9.0	7.7	9.5	11.3	13.4	15.6	a	15 41.21	56 2 10.0 26.2	I B 38.790	17 16 13.77	17 7 15.48	17 4788
67	8.5	28.0	30.0	31.8	33.9	36.1	a	16 1.70	56 2 “ “	I A 41.480	17 16 34.28	−17 14 32.02	−17 4789

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
68	9.4	5.0	7.1	9.1	11.5	13.7	c	16 9.29	56 2 10.0 26.2	III A	42.365	17 16 41.87	−17 14 50.52	−17 4790
69	9.0	48.6	50.4	52.4	54.4	56.7	a	17 22.25	56 2 " "	III A	51.640	17 17 54.83	17 17 46.54	17 4795
70	9.1	9.7	11.3	13.3	15.2	17.4	a	18 42.82	54 4 10.0 24.6	I	49.220	17 19 15.13	−15 15 38.78	−15 4544
71	9.0	52.1	53.8	55.9	57.7	0.0	a	19 25.33	54 4 " "	I B	42.250	17 19 57.63	−15 10 13.56	−15 4547
72	8.5	25.8	27.6	29.6	31.6	33.8	a	22 59.30	55 20 9.3 24.7	I	45.800	17 23 31.77	16 30 34.82	16 4526
73	8.6	2.4	4.1	6.0	8.0	10.3	a	24 35.91	56 8 10.0 26.2	I	42.980	17 25 8.49	17 17 43.78	17 4831
74	9.3	58.8	0.7	2.7	4.8	6.8	a	25 32.50	56 8 " "	I B	44.330	17 26 5.08	17 14 56.79	17 4838
75	8.9	29.0	30.9	32.7	34.7	37.0	a	27 2.60	56 4 10.0 25.9	I	43.540	17 27 35.17	17 13 52.96	17 4844
76	9.1	18.7	20.2	22.0	24.2	26.4	a	27 52.05	56 4 " "	I	47.330	17 28 24.63	17 15 4.75	17 4850
77	7.7	17.3	19.0	21.0	23.0	25.2	a	29 50.93	56 40 10.0 26.2	I B	47.060	17 30 23.57	17 47 48.36	17 4857
78	9.0	55.9	57.8	0.0	1.9	4.1	a	30 29.79	56 40 " "	I A	44.530	17 31 2.44	17 53 25.39	17 4861
79	8.8	42.8	44.6	46.8	48.4	50.8	a	31 16.51	56 40 " "	I B	41.220	17 31 49.14	17 45 56.56	17 4864
80	9.2	10.6	12.3	14.4	16.4	18.7	a	34 44.37	56 56 10.7 27.0	I	42.950	17 35 17.03	−18 5 41.71	18 4616
81	9.0	13.0	14.6	16.7	18.6	20.9	a	35 46.46	55 50 10.0 24.8	I	44.370	17 36 18.97	−17 0 3.61	−16 4591
82	9.0	23.8	25.5	27.5	29.5	31.8	a	36 57.39	56 16 10.0 25.6	I	48.820	17 37 29.96	17 27 29.43	17 4898
83	7.9	21.4	23.2	25.1	27.2	29.4	a	37 55.03	56 16 " "	I B	46.390	17 38 27.59	17 23 30.48	17 4906
84	8.7	49.2	51.0	53.0	55.1	57.3	a	40 22.96	56 40 10.0 26.7	I	47.270	17 40 55.58	17 51 0.02	17 4918
85	8.0	29.6	31.5	33.4	35.6	37.7	a	41 3.44	56 54 10.0 26.7	I	44.670	17 41 36.09	18 4 11.02	18 4645
86	8.3	31.9	33.7	35.7	37.7	39.8	a	42 5.43	55 38 10.0 25.0	I	42.780	17 42 37.90	16 47 30.00	16 4620
87	9.0	6.6	8.2	10.2	12.1	14.4	a	44 39.96	55 32 10.0 25.8	I	46.530	17 45 12.41	16 42 40.37	16 4630
88	8.9	12.4	14.1	16.0	18.0	20.2	a	45 45.81	55 32 " "	I A	45.190	17 46 18.27	16 46 27.56	16 4637
89	8.2	28.4	30.1	32.0	34.0	36.2	a	46 1.78	55 32 " "	III B	40.460	17 46 34.22	16 37 33.72	16 4640
90	9.2	48.8	50.8	52.8	54.8	56.8	a	47 22.55	56 6 10.0 26.2	I	43.550	17 47 55.08	−17 15 44.24	−17 4945
91	9.3	58.7	0.5	2.5	4.5	6.6	a	49 32.08	54 30 10.0 25.6	I	47.120	17 50 4.40	−15 40 46.45	−15 4721
92	9.3	24.0	25.8	27.6	29.6	31.8	a	50 57.64	56 56 10.0 25.7	I B	44.300	17 51 30.27	18 2 46.86	18 4722
93	9.0	18.3	20.0	22.0	24.0	26.2	a	51 52.00	56 56 " "	I A	45.910	17 52 24.64	18 9 42.59	18 4740
94	9.3	1.4	3.6	5.6	7.4	9.6	e	52 35.62	56 36 10.0 26.2	V	44.350	17 53 8.20	17 46 2.05	17 4975
95	8.8	35.3	37.3	39.6	41.7	43.9	c	54 39.57	56 54 10.0 26.5	III	44.780	17 55 12.19	18 4 8.74	18 4757
96	9.1	23.1	24.8	26.7	28.7	31.0	a	55 56.70	56 40 10.0 25.7	I	45.900	17 56 29.28	17 50 26.52	17 4995
97	9.1	2.9	4.5	6.3	8.2	10.6	a	56 36.38	56 52 10.0 26.5	III A	41.520	17 57 8.99	18 4 18.81	18 4766
98	9.1	42.9	45.0	47.1	49.2	51.4	c	56 47.13	56 52 " "	III B	43.970	17 57 19.73	17 58 39.92	17 5000
99	9.2	13.5	15.6	17.7	20.0	22.0	c	57 17.77	56 52 " "	V	46.890	17 57 50.38	18 2 49.26	18 4769
100	9.0	28.9	30.3	34.8	36.8	39.0	b_2 c_3	58 38.97	54 54 10.0 25.8	III B	45.200	17 59 11.31	−16 0 56.46	−16 4702
101	9.4	1.2	3.4	5.5	7.7	9.9	c	59 5.55	54 54 " "	V	47.920	17 59 37.89	−16 5 2.00	−16 4703
102	9.5	19.8	21.9	24.0	26.2	28.5	c	0 24.09	56 52 11.1 27.2	III A	43.830	18 0 56.69	18 5 1.99	18 4791
103	8.6	12.8	14.9	17.0	19.1	21.4	c	1 17.05	56 52 " "	V	45.140	18 1 49.65	18 2 15.04	18 4795
104	9.0	22.0	24.0	26.2	28.4	30.6	c	2 26.25	56 52 " "	III B	45.680	18 2 58.83	17 59 10.84	17 5034
105	9.0	20.0	21.9	24.0	25.7	28.0	a	3 53.51	55 6 9.3 24.3	I	47.360	18 4 25.87	16 16 45.17	16 4732
106	8.9	8.9	10.9	13.1	15.3	17.6	c	4 13.17	55 36 10.0 24.8	V	43.440	18 4 45.59	16 45 35.89	16 4736[1]
107	8.9	39.1	41.5	43.3	45.0	47.2	e	4 13.48	55 36 " "	VII	44.870	18 4 45.90	16 46 4.53	16 4736[2]
108	8.8	19.0	21.3	23.1	25.0	27.0	(e)	4 53.34	55 36 " "	VII B	46.720	18 5 25.75	16 43 26.98	16 4744
109	9.5	46.7	48.5	50.8	53.0	55.2	c	8 50.85	56 30 10.0 26.3	V	44.700	18 9 23.38	17 40 1.15	17 5087
110	8.7	35.7	37.9	39.9	44.1	45.8	c_3 d_2	9 35.64	56 30 " "	V B	49.600	18 10 8.17	−17 38 21.72	−17 5094
111	9.0	30.1	32.3	34.6	38.6	40.3	c_3 d_2	10 30.13	56 46 10.0 26.3	V	52.810	18 11 2.70	−17 58 35.62	−17 5107
112	9.1	27.3	29.5	31.7	33.7	35.9	c	11 31.63	56 46 " "	V B	42.020	18 12 4.18	17 51 57.35	17 5117
113	9.3	27.0	28.7	32.9	35.0	37.2	b_2 c_3	12 37.19	55 32 9.0 24.5	III	45.030	18 13 9.59	16 41 59.90	16 4804
114	8.9	43.8	45.9	48.0	52.3	53.9	c_3 d_2	12 43.76	55 32 " "	V	44.160	18 13 16.15	16 41 44.91	16 4805
115	9.6	43.4	45.3	47.3	49.3	51.6	a	14 16.96	55 4 10.0 25.8	I	43.170	18 14 49.29	16 13 21.74	16 4818
116	9.3	46.3	48.1	50.1	52.3	54.4	a	15 20.10	56 46 9.4 25.6	I	46.795	18 15 52.65	17 56 34.82	17 5154
117	8.5	4.9	6.5	8.5	10.5	13.0	a	16 38.50	56 34 10.0 26.2	I	43.530	18 17 11.02	17 43 32.08	17 5171
118	9.1	23.4	25.1	27.1	29.1	31.4	a	17 57.12	56 58 10.0 26.7	I	47.120	18 18 29.69	18 8 41.32	18 4944
119	9.1	7.7	9.8	12.0	14.2	16.3	c	18 12.01	56 48 10.8 26.9	III	45.290	18 18 44.56	17 58 8.21	17 5183
120	9.3	19.3	21.6	23.6	25.2	27.5	e	18 53.57	56 28 10.0 25.6	VII B	43.520	18 19 26.06	−17 34 22.71	−17 5187
121	8.1	13.3	15.4	17.6	19.9	21.9	c	20 17.63	56 28 " "	III A	49.810	18 20 50.14	−17 42 44.36	−17 5194
122	6.5	0.3	2.0	4.0	6.0	8.0	a	21 33.90	56 42 10.0 26.0	I	43.970	18 22 6.42	17 51 38.60	17 5203
123	9.7	51.0	52.6	54.6	56.5	58.7	a	25 24.38	55 48 10.0 25.3	I A	47.020	18 25 56.78	17 1 45.14	17 5225
124	9.0	18.1	19.7	21.8	23.7	26.0	a	26 51.55	55 48 " "	I B	46.680	18 27 23.93	16 55 12.57	16 4925
125	8.4	56.6	58.0	2.1	4.6	6.8	b_2 c_3	27 6.66	55 48 " "	III	41.300	18 27 39.04	16 56 44.11	16 4930
126	9.4	16.3	18.5	20.6	24.7	26.5	c_3 d_2	27 16.29	55 48 " "	V B	41.300	18 27 48.67	16 53 33.28	16 4931
127	......	10.4	12.9	14.7	16.9	18.5	e	27 44.90	55 48 " "	VII A	39.870	18 28 17.29	16 59 32.52	17 5237
128	9.4	25.2	27.6	29.4	31.4	33.3	e	28 59.62	55 48 " "	VII B	42.660	18 29 31.99	16 53 59.77	16 4938
129	9.2	9.3	11.1	13.0	15.1	17.4	a	30 43.05	56 50 10.0 27.2	III	46.850	18 31 15.56	18 0 32.22	18 5014
130	9.2	4.5	6.3	8.3	10.0	12.3	a	31 37.99	55 52 10.0 24.7	III	47.140	18 32 10.38	−17 2 33.18	−17 5273
131	9.4	8.6	10.4	12.3	14.4	16.6	a	33 42.30	56 42 10.0 26.0	I	44.160	18 34 14.79	−17 51 36.84	−17 5281
132	9.3	43.5	45.3	47.1	49.0	51.3	a	34 16.73	54 26 10.0 25.2	III	42.390	18 34 48.92	15 34 57.77	15 5056
133	9.0	39.7	41.7	43.6	45.7	48.0	a	35 13.63	56 54 10.0 26.4	III	48.030	18 35 46.14	18 4 52.51	18 5037
134	9.3	......	3.9	5.8	8.2	10.3	c	39 5.99	55 32 10.0 26.2	V	51.750	18 39 38.32	16 43 59.04	16 5011
135	9.5	59.3	1.4	3.5	7.8	9.2	c_3 d_2	39 59.24	55 0 10.0 25.3	V	44.380	18 40 31.49	16 9 36.39	16 5021
136	9.8	18.0	20.1	22.1	24.4	26.5	c	41 22.23	55 26 10.0 26.1	V A	45.610	18 41 54.54	16 39 13.84	16 5030
137	7.7	44.9	47.0	49.1	51.2	53.3	c	41 49.11	55 26 " "	V B	42.220	18 42 21.40	16 31 43.74	16 5034
138	7.5	36.0	37.8	39.7	41.6	43.8	a	43 9.46	55 40 10.0 25.4	III	46.050	18 43 41.79	16 50 7.16	16 5041
139	9.1	49.7	51.6	53.6	55.5	57.8	a	44 23.33	55 40 " "	I A	43.210	18 44 55.66	16 52 23.94	16 5046
140	9.0	28.2	30.0	32.0	33.9	36.3	a	45 1.78	55 50 10.0 26.2	I	43.180	18 45 34.12	−16 59 10.76	−17 5349

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″			r	h m s	° ′ ″	°
141	8.8	8.0	9.8	11.7	13.8	16.0	a	45 41.56	55 50	10.0	26.2		III	42.640	18 46 13.90	−16 59 2.02	−17 5353
142	9.2	42.3	44.0	46.0	48.0	50.2	a	47 15.81	55 50	"	"		I A	46.230	18 47 48.15	17 3 21.06	17 5362
143	8.8	58.7	0.4	2.2	4.1	6.2	a	48 31.77	54 12	10.0	25.0		I	43.670	18 49 3.89	15 21 13.33	15 5146
144	9.5	22.0	24.1	26.0	27.9	30.0	e	51 56.05	56 54	10.0	26.8		VII	45.110	18 52 28.50	18 3 52.96	18 5147
145	9.0	53.5	55.9	57.7	59.5	1.8	e	52 27.73	56 54	"	"		VII	46.990	18 53 0.18	18 4 28.51	18 5153
146	8.8	32.0	34.4	36.1	38.0	40.0	e	53 6.16	56 54	"	"		VII B	46.170	18 53 38.61	18 1 0.16	18 5156
147	9.3	15.2	17.6	19.5	21.2	23.4	e	53 49.43	56 54	"	"		V	46.440	18 54 21.88	−18 4 16.05	−18 5162

Reduction Elements. Zone 58.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 12.3....	−0.182	−0.414	−0.297	−0.138	−0.378	−0.246
12.5....	0.094	−0.341	0.196			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	γ Scorpii		37 Librae		β Scorpii pr.		ψ Ophiuchi		μ Sagittarii		2 H. Scuti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	63 40 2.35		48 32 2.35		58 20 2.90		58 36 2.90		59 54 2.45		53 28 2.35	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	49.810	7 4.38		5 54.40	47.530	6 21.06	48.830	6 45.62	47.690	6 24.06	44.970	5 31.77
II Red. to Mer.	.770	1.55	46.110	1.69	.520	1.61	.760	1.61	.650	1.59	.910	1.66
VI Inclination	.610		45.990	0.82	.340		.640		.495		.710	
VII Refraction	.585	1 49.0	.945	1 1.3	.275	1 28.1	.600	1 29.1	.460	1 34.5	.710	1 14.1

	5 H. Scuti		Piazzi XVIII. 260	
	° ′ ″		° ′ ″	
CIRCLE READING.	47 12 1.90		54 16 2.65	
	r	′ ″	r	′ ″
I Microm. Eq......	48.200	6 33.71		5 20.73
II Red. to Mer......	.190	1.72		1.66
VI Inclination	47.980		44.270	2.04
VII Refraction	.960	59.4	.220	1 16.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Scorpii	14 57 39.46	11	−0.58	+15.27	63 48 57.3	43.9
37 Librae..........	15 28 10.76	11	−0.58	+15.21	48 39 0.6	43.8
β Scorpii pr.........	15 59 4.35	11	−0.58	+15.21	58 27 53.7	44.2
Groombridge 750 S. P............	16 2 59.95	6	+1.78	[+14.74]	304 14	....
ψ Ophiuchi	16 17 42.10	11	−0.58	+15.18	58 44 19.2	44.2
μ Sagittarii	18 7 13.97	11	−0.58	+15.27	60 2 2.6	44.5
2 H. Scuti	18 22 57.75	11	−0.58	+15.31	53 34 49.9	45.2
5 H. Scuti	18 37 33.23	11	−0.58	+15.26	47 19 36.7	45.7
51 H. Cephei s. P.....	18 50 17.30	4	+3.34	[+16.08]	306 10	....
Piazzi XVIII. 260..	18 55 18.50	11	−0.58	+15.34	54 22 43.5	45.5

h 15.675..........*dt* .... s +15.218
Hourly rate .... + 0.0271

Adopted Equator Point ....38° 56′ 44.62″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 59	29.855	85.9	86.1
15 56	29.865	83.6	83.3
16 52	29.865	82.0	81.3
17 52	29.875	80.0	79.3
18 58	29.865	78.2	77.1

Note.
20. Suspected double.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					$D=$ Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	−0.578	15 0	+17.647	+17.750	+17.852	+17.955	+18.059	−15.08	−15.39	−15.71	−16.03	−16.35
54	0.579	15 30	+17.634	17.746	17.857	17.971	18.086	−14.49	14.78	15.08	15.38	15.67
55	0.579	16 0	......	17.726	17.847	17.969	18.089	.....	13.87	14.14	14.41	14.68
56	0.579	16 30	......	17.693	17.819	17.946	18.074	.....	12.69	12.92	13.17	13.41
57	−0.579	17 0	......	17.643	17.774	17.905	18.038	.....	11.23	11.43	11.63	11.83
		17 30	......	17.580	17.713	17.845	17.981	.....	9.53	9.70	9.86	10.02
		18 0	......	17.505	17.638	17.770	17.902	.....	7.62	7.74	7.87	7.99
		18 30	......	17.420	17.548	17.678	17.808	.....	5.53	5.61	5.70	5.78
		19 0	......	+17.324	+17.447	+17.572	+17.697	.....	−3.31	−3.35	−3.39	−3.43

APPARENT RIGHT ASCENSION.	R 53°	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″	″
15 0	71.47	74.11	76.88	79.80	82.85	84.45
15 30	71.68	74.34	77.11	80.04	83.10	84.70
16 0	71.88	74.54	77.32	80.26	83.33	84.94
16 30	72.03	74.70	77.48	80.43	83.50	85.11
17 0	72.19	74.87	77.66	80.61	83.70	85.31
17 30	72.34	75.02	77.82	80.78	83.87	85.49
18 0	72.49	75.18	77.98	80.95	84.04	85.66
18 30	72.61	75.30	78.11	81.08	84.18	85.80
19 0	72.73	75.42	78.23	81.21	84.31	85.94

1894 JULY 18. ZONE 59. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.0	42.6	44.3	46.4	48.4	50.6	a	44 16.33	56 48 10.0 26.9	I 45.060	15 44 52.81	−17 59 9.09	−17 4437
2	8.6	55.8	57.4	59.5	1.4	3.7	a	49 29.38	56 32 10.0 26.5	I 48.650	15 50 5.83	17 44 14.38	17 4450
3	8.8	34.4	36.6	38.8	41.0	43.1	c	49 38.79	56 24 10.0 26.2	III 45.660	15 50 15.22	17 35 18.72	17 4451
4	8.5	6.3	8.1	10.0	12.0	14.1	a	51 39.77	55 36 10.0 25.4	I 47.770	15 52 16.11	16 47 53.69	16 4185
5	8.7	32.6	34.3	36.5	38.4	40.6	a	52 6.25	56 16 10.0 26.2	III 46.430	15 52 42.67	17 27 32.02	17 4461
6	8.9	27.0	29.2	31.0	33.0	34.9	e	52 1.23	55 56 10.0 25.7	VII 43.560	15 52 37.60	17 6 39.31	16 4189
7	9.0	52.1	53.9	55.8	57.9	2.8	e_2VII	52 24.13	55 56 " "	VII(A) 44.390	15 53 0.51	17 10 7.83	17 4463
8	9.0	53.5	55.3	57.5	59.7	1.9	c	1 57.59	55 42 10.0 26.0	V 42.000	16 2 33.93	16 52 3.66	16 4222
9	8.9	37.1	38.9	40.8	42.8	45.0	a	3 10.61	55 42 " "	I A 42.180	16 3 46.95	16 55 16.33	16 4230
10	9.1	58.3	0.2	2.0	4.1	6.3	a	3 31.85	55 42 " "	III B 38.980	16 4 8.18	−16 47 51.58	−16 4234
11	9.2	41.4	43.2	45.1	47.0	49.3	a	31 14.77	55 0 10.0 25.2	I 44.640	16 31 50.99	−16 10 35.76	−16 4316
12	8.7	12.0	14.1	16.2	18.5	20.6	c	31 16.29	55 28 10.0 25.0	V 45.210	16 31 52.57	16 38 51.23	16 4317
13	9.3	18.9	21.1	23.4	25.6	27.8	c	32 23.37	56 30 10.0 26.4	III 48.220	16 32 59.79	17 41 49.97	17 4608
14	9.3	20.2	22.0	24.0	26.0	28.2	a	34 53.48	53 48 10.0 25.4	I 42.300	16 35 29.54	14 57 46.68	14 4470
15	8.7	56.0	57.8	59.6	1.6	3.9	a	35 29.35	55 0 10.0 25.6	I 43.615	16 36 5.57	16 10 14.59	16 4328
16	8.9	35.9	37.6	39.6	41.4	43.6	a	40 9.39	56 18 10.0 26.1	I B 42.250	16 40 45.76	17 24 38.13	17 4631
17	9.2	8.7	10.9	13.0	15.2	17.5	c	40 13.07	56 18 " "	III A 45.690	16 40 49.45	17 32 10.79	17 4632
18	8.9	24.4	26.3	28.0	30.0	32.2	a	49 57.62	54 6 10.0 25.2	I B 40.560	16 50 33.68	15 11 55.33	15 4409
19	8.7	58.0	59.4	3.5	5.7	7.9	b_2 c_3	50 7.90	54 6 " "	III A 44.460	16 50 43.98	15 19 36.60	15 4410
20	9.4	49.3	51.1	53.1	55.1	57.3	a	51 22.68	54 28 10.0 25.1	III 47.500	16 51 58.80	−15 39 21.73	−15 4417
21	8.4	5.1	7.0	8.9	10.8	13.0	a	52 38.46	54 28 " "	I 47.820	16 53 14.59	−15 39 25.44.	−15 4420
22	9.3	37.0	38.9	40.7	42.8	44.9	a	53 10.36	54 28 " "	I 44.500	16 53 46.48	15 38 22.00	15 4422
23	9.3	40.3	42.1	44.1	46.1	48.2	a	57 13.50	53 20 10.0 25.3	I B 48.380	16 57 49.46	14 28 19.07	14 4527
24	9.0	46.2	48.0	49.9	51.9	54.0	a	58 19.33	53 20 " "	I B 40.660	16 58 55.29	14 25 51.65	14 4535
25	8.6	14.8	16.5	18.5	20.5	22.6	a	58 47.93	53 20 " "	III A 48.340	16 59 23.90	14 34 44.72	14 4538
26	9.3	59.5	1.3	3.1	5.1	7.4	a	0 32.88	55 8 10.0 26.1	I 44.890	17 1 9.08	16 18 28.41	16 4416
27	9.3	13.0	14.9	16.8	18.7	21.0	a	0 46.47	55 8 " "	III B 45.370	17 1 22.66	16 15 26.94	16 4420
28	9.0	3.0	4.8	6.8	8.9	10.9	a	1 36.38	54 28 10.0 25.0	III 44.810	17 2 12.49	15 38 25.91	15 4456
29	......	29.0	30.6	32.7	34.7	36.9	a	3 2.28	54 28 " "	I A 46.760	17 3 38.39	15 42 13.77	15 4463
30	......	29.1	30.9	33.0	34.9	37.0	a	4 2.47	54 28 " "	I B 47.685	17 4 38.37	−15 36 5.47	−15 4467
31	8.3	29.1	30.8	35.0	37.1	39.6	b_2 c_3	4 39.35	55 16 10.0 25.6	III A 47.390	17 5 15.56	−16 30 29.19	−16 4434
32	8.4	3.5	5.6	7.8	10.0	12.0	c	5 7.79	55 16 " "	V B 41.100	17 5 43.98	16 22 5.40	16 4436
33	9.2	3.1	5.0	6.9	8.9	11.1	a	6 36.61	55 16 " "	I B 46.170	17 7 12.80	16 23 37.92	16 4443
34	8.3	5.3	6.9	8.9	10.9	13.0	a	9 38.56	54 58 10.0 25.7	I B 44.040	17 10 14.70	16 4 55.26	16 4460
35	9.4	40.3	42.0	46.2	48.2	50.4	b_2 c_3	9 50.45	54 58 " "	III 45.660	17 10 26.60	16 8 40.05	16 4461
36	8.8	20.6	22.6	24.8	27.0	29.0	c	10 24.81	54 58 " "	III B 48.500	17 11 0.96	16 6 21.54	16 4464
37	7.2	24.1	26.0	27.9	29.8	32.0	a	11 57.54	54 58 " "	I A 47.060	17 12 33.70	16 12 17.14	16 4470
38	9.0	0.7	3.0	5.1	7.3	9.4	c	12 5.11	54 58 " "	III B 46.785	17 12 41.25	16 5 48.14	16 4471
39	8.9	58.2	59.9	1.9	3.9	6.1	a	13 31.57	54 58 " "	I 48.040	17 14 7.71	16 9 21.87	16 4477
40	9.0	57.2	58.9	0.8	3.0	5.1	[illegible]	15 30.81	56 30 10.0 27.0	I 45.080	17 16 7.15	−17 40 29.55	−17 4787
41	8.7	36.1	38.0	40.0	41.9	44.2	a	16 9.84	56 30 " "	I B 42.180	17 16 46.17	−17 36 21.79	17 4791
42	8.9	10.1	11.8	13.7	15.7	17.9	a	23 43.33	54 24 10.0 25.4	I 43.925	17 24 19.37	15 33 57.22	15 4569
43	8.0	34.6	36.6	38.5	40.4	42.7	a	24 8.05	54 24 " "	I 42.300	17 24 44.09	15 33 26.16	15 4572
44	8.5	15.0	16.9	18.7	20.6	22.9	a	24 48.53	55 54 10.0 27.0	I 43.640	17 25 24.77	17 3 56.24	17 4834
45	9.1	7.9	9.6	11.7	13.7	15.8	a	27 41.45	55 54 10.0 27.6	I 44.320	17 28 17.68	17 4 7.68	17 4849
46	8.7	54.8	56.6	58.7	0.6	2.9	a	29 28.24	54 40 10.0 25.4	I B 41.410	17 30 4.29	15 45 55.24	15 4606
47	9.0	3.0	4.8	6.7	8.6	10.7	a	30 36.30	54 40 " "	I A 42.320	17 31 12.36	15 52 37.51	15 4616
48	8.9	44.6	46.5	48.5	50.3	52.5	a	31 18.00	54 40 " "	I B 41.645	17 31 54.04	15 45 58.89	15 4623
49	9.2	39.3	41.1	43.2	45.1	47.1	a	32 12.51	53 26 10.0 25.4	I B 40.710	17 32 48.39	14 31 37.53	14 4709
50	8.8	9.2	11.4	13.6	15.7	17.9	c	32 13.57	53 26 " "	III A 45.100	17 32 49.47	−14 39 28.19	−14 4710
51	8.7	31.6	33.6	35.5	37.5	39.6	a	33 4.91	53 26 " "	III 46.030	17 33 40.81	−14 36 32.41	−14 4715
52	9.0	35.8	37.6	39.5	41.4	43.6	a	35 9.02	54 4 10.0 24.3	I 45.120	17 35 45.00	15 14 13.42	15 4646
53	9.3	19.2	21.1	23.0	25.0	27.3	a	35 52.62	54 30 10.0 25.2	I 45.985	17 36 28.65	−15 40 31.10	−15 4651[1]

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
54	9.2	48.7	50.9	53.0	55.1	57.3	c	35 53.01	54 30 10.0 25.2	III	45.960	17 36 29.04	−15 40 32.45	−15 4651
55	8.8	58.7	0.1	4.5	6.5	8.7	b_2 c_3	37 8.73	55 36 10.0 25.0	III	44.275	17 37 44.90	16 46 2.69	16 4599
56	8.6	22.3	24.0	26.2	28.2	30.2	a	37 55.86	55 36 " "	I A	43.890	17 38 32.04	16 49 6.41	16 4603
57	9.1	41.5	43.1	45.1	47.1	49.2	a	38 14.86	55 36 " "	III B	47.600	17 38 51.02	16 43 53.17	16 4607
58	8.9	2.1	4.0	5.9	7.8	9.9	a	38 35.60	55 36 " "	III B	45.380	17 39 11.76	16 43 10.75	16 4610
59	9.3	46.4	48.0	50.1	52.0	54.4	a	40 19.87	55 44 10.0 26.1	I	45.980	17 40 56.05	16 54 32.81	16 4614
60	9.4	51.9	53.7	55.6	57.8	0.0	a	45 25.16	53 30 10.0 25.3	I	48.270	17 46 1.03	−14 41 7.73	−14 4794
61	9.4	21.8	23.8	25.7	27.5	29.9	a	45 55.33	55 6 10.0 26.0	III	43.890	17 46 31.41	−16 15 50.51	−16 4638
62	8.7	26.7	28.5	30.4	32.4	34.6	a	49 59.95	53 56 10.0 25.5	I A	47.130	17 50 35.87	15 9 58.39	15 4724
63	9.1	41.9	43.8	45.8	47.6	49.9	a	50 15.21	53 56 " "	III B	45.310	17 50 51.12	15 2 59.92	15 4728
64	9.3	31.4	33.1	35.0	36.9	39.2	a	53 4.44	53 16 10.0 25.2	I B	42.410	17 53 40.25	14 21 59.83	14 4838
65	9.0	10.3	12.1	14.1	16.1	18.3	a	53 43.52	53 16 " "	III A	46.145	17 54 19.34	14 29 37.76	14 4841
66	8.2	16.6	18.9	20.9	22.8	24.7	e	53 51.15	54 54 10.0 26.2	V	43.230	17 54 27.18	16 3 37.54	16 4678
67	8.1	43.0	44.8	46.7	48.7	51.0	a	56 16.62	56 18 10.0 26.7	I A	44.860	17 56 52.83	17 31 19.47	17 4997
68	8.0	36.3	38.4	40.7	42.7	44.9	c	56 40.61	56 18 " "	III B	44.630	17 57 16.81	17 24 51.19	17 4999
69	8.0	22.6	24.1	26.2	28.0	30.5	a	57 56.04	56 8 10.0 27.0	III A	45.140	17 58 32.23	17 21 25.43	17 5005
70	9.4	26.9	28.6	30.6	32.5	34.9	a	59 0.45	56 8 " "	I	43.950	17 59 36.62	−17 17 47.34	−17 5011
71	9.3	35.0	37.1	39.1	41.0	43.1	a	0 8.80	56 8 " "	I B	37.540	18 0 44.96	−17 12 32.55	−17 5020
72	7.0	50.7	52.6	54.4	56.3	58.6	a	1 24.25	56 0 10.0 26.6	I	44.930	18 2 0.40	17 10 4.32	17 5028
73	9.0	31.2	33.0	35.1	37.0	39.3	a	2 4.94	56 34 10.0 26.2	III	45.900	18 2 41.16	17 44 25.80	17 5033
74	8.9	9.6	11.6	13.5	15.6	17.8	a	3 43.45	56 34 " "	I	47.900	18 4 19.67	17 45 1.31	17 5045
75	8.9	31.7	33.7	35.8	37.5	39.8	a	4 5.53	56 34 " "	I	52.730	18 4 41.75	17 46 33.07	17 5048
76	9.4	40.7	42.5	44.4	46.4	48.5	a	5 13.97	54 16 10.0 25.5	I	47.240	18 5 49.88	15 26 41.20	15 4852
77	8.8	35.4	37.1	39.1	40.9	43.1	a	6 8.58	54 14 10.0 25.2	I	44.465	18 6 44.49	15 23 47.75	15 4864
78	9.0	46.4	48.1	50.1	52.1	54.3	a	7 19.71	54 34 10.0 25.3	I	44.825	18 7 55.65	15 43 54.99	15 4876
79	9.0	24.5	26.1	28.1	30.1	32.5	a	7 58.13	56 48 10.0 27.1	III	47.220	18 8 34.36	17 58 49.43	17 5079
80	8.3	22.6	24.5	26.4	28.3	30.7	a	8 56.18	55 44 10.0 26.5	III B	47.680	18 9 32.26	−16 51 41.97	−16 4771
81	8.9	56.3	58.3	0.7	2.9	5.0	c	9 0.65	55 44 " "	V B	40.850	18 9 36.73	−16 49 32.91	−16 4773
82	......	40.1	42.1	44.3	46.6	48.7	c	9 44.37	55 44 " "	V	40.320	18 10 20.45	16 52 34.87	16 4779
83	9.0	15.4	18.1	19.8	21.7	23.5	e	9 49.95	55 44 " "	VII B	42.300	18 10 26.03	16 50 1.49	16 4781
84	8.9	18.2	20.5	22.2	24.1	26.2	e	10 52.46	55 44 " "	VII A	46.620	18 11 28.55	16 57 48.57	16 4790
85	9.1	43.1	45.4	47.3	49.0	51.0	e	11 17.40	55 44 " "	VII	43.340	18 11 53.48	16 53 33.11	16 4797
86	9.0	54.8	56.4	0.6	2.7	4.9	b_2 c_3	13 4.94	56 36 10.0 27.2	III	44.210	18 13 41.14	17 45 49.30	17 5130
87	7.5	19.5	21.6	23.9	26.1	28.1	c	13 23.85	56 36 " "	V	49.430	18 14 0.05	17 47 30.17	17 5133
88	8.9	8.2	10.4	12.6	14.8	17.0	c	14 12.61	56 36 " "	III	49.530	18 14 48.81	17 47 30.09	17 5144
89	9.1	40.7	43.0	45.0	46.6	48.7	e	14 14.90	56 36 " "	VII B	42.080	18 14 51.08	17 41 58.82	17 5145
90	8.7	57.3	59.1	1.1	3.1	5.4	a	18 30.80	55 10 10.0 25.4	I	44.660	18 19 6.79	−16 19 48.54	−16 4861
91	9.3	14.3	16.0	20.0	22.1	24.4	b_2 c_3	19 24.38	55 10 " "	I B	40.350	18 20 0.36	[−16 15 13.84]	−16 4868
92	8.5	6.7	8.6	10.7	12.8	14.8	a	20 40.49	56 12 10.0 26.5	III	48.210	18 21 16.61	17 23 0.52	17 5197
93	8.6	42.0	44.0	46.3	48.5	50.6	c	20 46.29	56 12 " "	V B	49.540	18 21 22.40	17 20 15.04	17 5198
94	9.0	46.3	48.4	50.6	52.8	54.9	c	21 50.61	54 56 10.0 25.7	III	44.240	18 22 26.56	16 5 40.37	16 4887
95	9.1	32.9	34.7	36.6	38.6	41.0	a	23 6.53	56 14 10.0 27.0	I	48.410	18 23 42.65	17 25 1.76	17 5213
96	9.1	53.7	55.7	57.4	59.5	1.6	a	24 27.34	56 14 " "	I B	41.490	18 25 3.44	17 19 37.19	17 5220
97	8.0	57.9	59.6	1.6	3.5	5.8	a	25 31.12	54 6 10.0 25.0	I	42.960	18 26 6.95	15 15 9.95	15 5001
98	8.9	56.0	57.8	59.8	1.8	3.9	a	26 29.40	54 42 10.0 26.0	I A	43.110	18 27 5.31	15 54 27.70	15 5006
99	8.2	11.3	13.3	15.2	17.2	19.5	a	27 44.83	54 42 " "	I	41.020	18 28 20.72	15 50 34.13	15 5016
100	9.3	48.3	50.1	52.0	54.1	56.2	a	29 21.67	54 42 " "	I B	43.480	18 29 57.55	−15 48 8.00	−15 5024
101	8.5	0.7	2.4	4.3	6.2	8.6	a	30 34.05	55 12 10.0 26.2	I	46.800	18 31 10.00	−16 22 24.43	−16 4955
102	8.7	13.7	15.6	17.5	19.5	21.7	a	30 47.20	55 12 " "	III	42.010	18 31 23.15	16 20 54.97	16 4956
103	8.5	41.3	43.1	45.1	47.1	49.3	a	32 14.79	55 12 " "	I A	41.080	18 32 50.74	16 23 48.03	16 4963
104	9.0	4.4	5.9	7.9	9.9	12.2	a	33 37.74	55 40 10.0 26.4	I	44.525	18 34 13.74	16 49 41.19	16 4971
105	9.4	35.6	37.8	39.8	42.0	44.0	c	33 39.85	54 14 10.0 25.4	V	47.070	18 34 15.67	15 24 28.57	15 5051
106	9.0	56.2	58.2	0.1	2.1	4.4	a	35 29.89	55 42 10.0 25.8	I A	41.950	18 36 5.89	16 54 4.40	16 4985
107	8.6	29.8	31.6	33.4	35.5	37.8	a	37 3.31	55 42 " "	I	48.630	18 37 39.30	16 52 57.62	16 4998
108	9.3	46.3	48.1	50.1	52.0	54.3	a	38 19.85	55 42 " "	I	51.450	18 38 55.84	16 53 50.76	16 5006
109	9.6	20.6	22.5	24.4	26.0	28.3	a	38 54.05	55 42 " "	III	48.315	18 39 30.03	16 52 52.68	16 5010
110	9.5	19.0	20.8	22.8	24.7	26.9	a	39 52.52	55 42 " "	III	41.635	18 40 28.50	−16 50 45.08	−16 5019
111	9.0	12.1	13.6	17.9	20.1	22.4	b_2 c_3	40 22.26	55 42 " "	III A	44.960	18 40 58.24	−16 55 1.27	−16 5022
112	9.0	43.2	45.3	47.5	49.8	51.9	c	40 47.55	55 42 " "	V B	44.280	18 41 23.52	16 48 24.27	16 5026
113	6.7	32.0	34.1	36.4	38.4	40.5	c	41 36.29	55 42 " "	III	49.040	18 42 12.26	16 53 5.28	16 5033
114	8.9	4.8	6.7	8.8	10.6	13.0	a	43 38.66	56 54 10.0 26.8	I	42.780	18 44 14.78	18 3 7.53	18 5093
115	8.9	1.5	3.2	5.3	7.2	9.5	a	44 35.19	56 44 10.0 26.4	I	46.500	18 45 11.28	17 54 17.23	17 5342
116	9.0	14.3	16.4	18.1	20.1	22.3	a	44 48.08	56 44 " "	III B	40.800	18 45 24.16	17 49 18.13	17 5344
117	9.0	25.9	27.6	29.5	31.2	33.6	a	45 59.05	54 22 10.0 26.0	III A	36.990	18 46 34.84	15 32 23.46	15 5129
118	8.6	3.3	5.1	7.1	9.1	11.3	a	46 36.66	54 22 " "	III B	40.190	18 47 12.43	15 26 58.68	15 5132
119	8.8	49.9	51.9	54.1	56.4	58.5	c	46 54.17	54 22 " "	III A	39.025	18 47 29.95	15 33 1.77	15 5133
120	8.9	48.5	50.6	52.9	54.9	57.2	c	47 52.83	53 58 10.0 25.0	V	45.715	18 48 28.56	−15 7 55.65	−15 5138
121	8.1	25.1	26.8	28.7	30.8	33.0	a	48 58.27	53 40 10.0 25.3	III	43.210	18 49 33.96	−14 49 5.21	−14 5225
122	9.3	24.8	26.8	28.7	30.5	32.8	a	49 58.52	56 28 10.0 27.0	III	42.190	18 50 34.56	17 36 54.18	17 5386
123	7.7	46.6	48.4	50.3	52.2	54.4	a	50 20.18	56 28 " "	III B	44.405	18 50 56.21	17 34 23.85	17 5388
124	9.4	56.5	58.4	0.4	2.4	4.4	a	51 30.07	55 34 10.0 26.2	I B	45.120	18 52 5.98	16 40 32.15	16 5096
125	9.1	39.7	41.7	43.6	45.6	47.8	a	52 13.35	55 34 " "	I A	42.940	18 52 49.27	16 46 15.83	16 5100
126	9.2	8.5	10.6	12.7	14.8	16.9	c	53 12.71	53 4 10.0 24.9	V	44.880	18 53 48.32	−14 13 35.03	−14 5246

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
127	8. 1	14. 8	17. 0	19. 2	21. 4	23. 5	c	54 19. 19	56 10 10. 0 26. 1	III	49. 930	18 54 55. 18	—17 21 18. 32	—17 5414
128	8. 3	9. 6	11. 4	13. 6	15. 5	17. 8	a	55 43. 28	55 50 10. 0 25. 3	I	45. 600	18 56 19. 22	16 59 52. 06	17 5427
129	9. 2	56. 0	57. 8	59. 8	1. 9	3. 9	a	56 29. 58	55 50 " "	I	42. 800	18 57 5. 51	16 58 58. 43	17 5434
130	8. 6	8. 1	9. 9	11. 9	13. 8	16. 0	a	57 41. 65	55 50 " "	I A	43. 230	18 58 17. 59	—17 2 19. 35	—17 5445
131	8. 6	54. 2	56. 0	58. 1	0. 0	2. 3	a	58 27. 82	55 50 " "	I	47. 710	18 59 3. 75	-17 0 31. 06	—17 5454
132	9. 4	46. 8	48. 9	51. 0	53. 3	55. 3	c	58 51. 07	55 50 " "	V B	45. 000	18 59 26. 99	16 56 30. 39	17 5458
133	8. 5	19. 0	20. 6	22. 6	24. 7	26. 8	a	58 52. 44	55 50 " "	I	49. 160	18 59 28. 37	17 0 58. 51	17 5459
134	8. 8	41. 3	43. 2	45. 5	47. 9	49. 8	c	4 45. 55	55 0 10. 0 25. 9	V B	40. 520	19 5 21. 34	16 5 0. 48	16 5187
135	9. 3	35. 1	37. 5	39. 5	41. 3	43. 2	e	5 9. 66	55 0 " "	V A	46. 080	19 5 45. 46	16 13 11. 54	16 5191
136	9. 3	12. 7	15. 1	17. 0	18. 9	20. 9	e	5 47. 28	55 0 " "	V (B)	41. 470	19 6 23. 06	16 5 18. 14	16 5194
137	8. 8	50. 5	52. 2	54. 1	56. 1	58. 3	a	7 23. 81	55 0 " "	III	45. 380	19 7 59. 60	16 9 42. 64	16 5208
138	9. 2	30. 3	32. 0	36. 0	38. 2	40. 4	b_2 c_3	7 40. 40	55 0 " "	III A	44. 220	19 8 16. 19	16 12 33. 56	16 5210
139	......	8. 7	11. 0	12. 9	14. 7	16. 7	e	7 43. 16	55 0 " "	V B	38. 190	19 8 18. 93	16 4 14. 88	16 5211
140	......	37. 5	39. 7	41. 9	43. 9	46. 2	(c)	8 41. 85	55 0	....		19 9 17. 63	—16 8 56	—16 5215^1
141	......	7. 7	9. 8	11. 7	13. 6	15. 5	(e)	8 42. 01	55 0	....		19 9 17. 79	-16 9 1	—16 5215^2
142	9. 6	26. 8	28. 6	30. 6	32. 7	34. 9	a	13 0. 16	54 4 10. 0 24. 7	I	43. 810	19 13 35. 81	15 13 5. 41	15 5312
143	9. 0	58. 0	59. 7	3. 7	6. 0	8. 1	b_2 c_3	17 8. 13	55 34 10. 0 25. 5	III B	49. 650	19 17 43. 94	16 41 49. 03	16 5292
144	9. 3	35. 1	37. 1	39. 1	40. 9	43. 0	a	18 8. 69	55 34 " "	I B	43. 310	19 18 44. 49	16 39 46. 19	16 5298
145	9. 3	9. 9	12. 0	14. 1	16. 3	18. 5	c	18 14. 17	55 34 " "	III A	44. 200	19 18 49. 98	16 46 30. 28	16 5300
146	9. 2	22. 7	24. 6	27. 0	29. 1	31. 3	c	19 26. 95	55 34 " "	V A	45. 490	19 20 2. 76	16 46 55. 86	16 5307
147	8. 8	41. 6	43. 3	45. 3	47. 3	49. 7	a	21 15. 09	55 30 10. 0 26. 0	I	43. 880	19 21 50. 88	16 39 8. 08	16 5318
148	8. 9	56. 7	58. 6	0. 6	2. 6	4. 7	a	22 30. 30	55 30 " "	I A	46. 850	19 23 6. 09	16 43 17. 35	16 5325
149	9. 1	22. 5	24. 4	26. 4	28. 4	30. 5	a	22 56. 08	55 30 " "	III B	42. 180	19 23 31. 85	[16 35 24. 55]	16 5329
150	9. 1	12. 1	14. 0	16. 3	18. 5	20. 6	c	26 16. 31	53 22 10. 0 24. 5	V	47. 560	19 26 51. 83	—14 32 12. 80	—14 5457
151	9. 1	4. 0	6. 2	8. 1	9. 9	11. 9	e	27 38. 64	53 4 10. 0 25. 0	VII	42. 505	19 28 14. 11	—14 12 36. 93	—14 5464

Reduction Elements. Zone 59.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 18. 3....	—0. 094	—0. 232	—0. 119	—0. 076	—0. 244	—0. 122
18. 5....	—0. 057	—0. 257	—0. 126			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	37 Librae		η Librae		β Scorpii pr.		φ Ophiuchi		λ Aquilae		π Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	48 32 2. 75		54 10 2. 60		58 20 2. 80		55 12 2. 70		43 52 2. 50		60 0 2. 65	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46. 225	5 55. 83	45. 635	5 44. 98	47. 530	6 20. 75	47. 910	6 28. 19	47. 350	6 18. 34	48. 445	6 38. 48
II Red. to Mer......	. 165	1. 70	. 605	1. 66	. 465	1. 61	. 870	1. 65	. 340	1. 75	. 390	. 59
VI Inclination	. 010		. 430		. 320		. 705		. 225		. 250	
VII Refraction.......	45. 960	1 2. 0	. 410	1 15. 9	. 285	1 29. 0	. 680	1 19. 2	. 180	53. 4	. 245	1 36. 0

	υ Sagittarii	
	° ′ ″	
CIRCLE READING.	54 58 2. 55	
	r	′ ″
I Microm. Eq......	48. 330	6 36. 17
II Red. to Mer......	. 310	1. 65
VI Inclination	. 125	
VII Refraction.......	. 080	1 19. 2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
37 Librae............	15 28 6. 85	11	—0. 33	+18. 85	48 39 2. 3	45. 7
η Librae............	15 37 50. 48	11	—0. 33	+18. 83	54 17 5. 1	45. 3
β Scorpii pr...........	15 59 0. 70	11	—0. 33	+18. 57	58 27 54. 2	44. 8
Groombridge 750 S. P............	16 2 58. 06	6	·· 1. 36	[+18. 74]	304 14	....
φ Ophiuchi	16 24 48. 70	11	—0. 33	+18. 59	55 19 51. 7	45. 8
λ Aquilae...........	19 0 22. 02	11	—0. 34	+18. 78	43 59 16. 0	45. 3
π Sagittarii	19 3 12. 64	11	—0. 33	+18. 68	60 8 18. 7	44. 9
υ Sagittarii	19 15 24. 35	11	—0. 33	+18. 68	55 5 59. 6	44. 8
λ Ursae Minoris.....	19 29 27. 48	4	—7. 77	[+18. 92]	309 58	....
κ Aquilae...........	19 30 55. 89	11	—0. 34	+18. 90	46 10	....

h s
15. 872..........*dt*.................... +18. 710
Hourly rate .... + 0. 0150

° ′ ″
Adopted Equator Point...........38 56 45. 23

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
15 32	29. 965	81. 5	81. 1
16 9	29. 965	79. 9	79. 2
17 7	29. 965	77. 8	77. 0
18 17	29. 955	76. 1	75. 1
19 35	29. 955	74. 6	73. 4

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	−0. 329	15 30	......	......	+17. 882	+17. 996	+18. 110	.....	.....	−15. 01	−15. 33	−15. 65
54	0. 329	16 0	......	......	17. 861	17. 983	18. 104	.....	.....	14. 08	14. 38	14. 67
55	0. 329	16 30	+17. 570	+17. 695	17. 822	17. 949	18. 077	−12. 32	−12. 59	12. 86	13. 12	13. 38
56	0. 328	17 0	17. 504	17. 634	17. 765	17. 894	18. 027	10. 89	11. 12	11. 35	11. 58	11. 82
57	−0. 328	17 30	17. 426	17. 558	17. 688	17. 821	17. 956	9. 19	9. 38	9. 58	9. 78	9. 97
		18 0	17. 336	17. 466	17. 597	17. 729	17. 862	7. 29	7. 44	7. 60	7. 76	7. 91
		18 30	17. 237	17. 364	17. 492	17. 622	17. 753	5. 20	5. 31	5. 43	5. 55	5. 66
		19 0	17. 129	17. 252	17. 374	17. 499	17. 623	2. 94	3. 02	3. 09	3. 16	3. 24
		19 30	+17. 016	+17. 132	+17. 247	+17. 363	+17. 480	− 0. 59	− 0. 61	− 0. 64	− 0. 68	− 0. 71

APPARENT RIGHT ASCENSION.	*R*				
	53°	54°	55°	56°	57°
h m	″	″	″	″	″
15 30	72. 41	75. 09	77. 89	80. 85	83. 95
16 0	72. 63	75. 32	78. 13	81. 10	84. 20
16 30	72. 81	75. 51	78. 32	81. 30	84. 41
17 0	72. 98	75. 68	78. 51	81. 49	84. 61
17 30	73. 08	75. 79	78. 61	81. 60	84. 72
18 0	73. 18	75. 89	78. 72	81. 71	84. 84
18 30	73. 27	75. 98	78. 81	81. 81	84. 94
19 0	73. 37	76. 09	78. 92	81. 92	85. 06
19 30	73. 45	76. 17	79. 01	82. 02	85. 15

1894 JULY 20. ZONE 60. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8. 9	11. 2	13. 1	15. 2	17. 0	19. 3	a	0 44. 81	55 30 10. 0 25. 1	I 43. 360	16 1 22. 03	−16 40 23. 00	−16 4219
2	8. 7	48. 4	50. 5	52. 7	54. 9	57. 0	c	0 52. 71	56 28 10. 0 24. 8	III 48. 145	16 1 30. 06	17 39 58. 31	17 4491
3	9. 1	21. 1	23. 5	25. 4	27. 0	29. 1	e	0 55. 35	56 28 " "	VII B 46. 610	16 1 32. 69	17 36 19. 65	17 4492
4	9. 0	51. 8	53. 9	56. 1	58. 2	0. 4	c	51 56. 09	56 8 10. 0 25. 2	III 45. 560	16 52 33. 36	17 18 46. 40	17 4672
5	8. 9	12. 7	14. 6	16. 5	18. 4	20. 7	a	56 46. 09	54 32 9. 4 24. 2	III 48. 920	16 57 23. 14	15 43 42. 95	15 4435
6	8. 6	17. 1	18. 9	21. 0	22. 8	25. 0	a	57 50. 69	55 58 10. 0 24. 3	I 45. 700	16 58 27. 92	17 8 43. 69	17 4697
7	9. 3	57. 1	59. 1	1. 4	3. 4	5. 8	c	58 1. 37	56 6 10. 0 24. 5	V B 39. 615	16 58 38. 61	17 11 39. 32	17 4699
8	7. 5	29. 6	32. 0	33. 9	35. 9	37. 7	e	58 3. 99	56 6 " "	VII(A)48. 480	16 58 41. 25	17 20 54. 74	17 4700
9	9. 3	0. 4	2. 3	4. 1	6. 1	8. 5	a	1 34. 13	56 44 10. 0 24. 7	I 44. 420	17 2 11. 47	17 54 20. 03	17 4715
10	8. 2	27. 6	29. 4	31. 4	33. 4	35. 7	a	2 1. 19	55 40 10. 0 24. 0	III A 49. 100	17 2 38. 39	−16 55 0. 49	−16 4422
11	8. 5	33. 2	35. 5	37. 5	39. 8	41. 9	c	2 37. 59	55 40 " "	III B 41. 940	17 3 14. 77	−16 46 18. 54	−16 4425
12	8. 7	16. 6	18. 4	20. 4	22. 3	24. 6	a	3 50. 01	54 52 10. 0 24. 3	III 45. 270	17 4 27. 09	16 2 31. 69	15 4466
13	8. 3	7. 6	9. 2	11. 2	13. 2	15. 5	a	5 40. 68	53 20 9. 2 22. 1	I 43. 320	17 6 17. 54	14 29 46. 64	14 4565
14	8. 9	57. 6	59. 8	2. 1	4. 3	6. 3	c	6 2. 03	56 46 9. 4 24. 5	V A 48. 660	17 6 39. 37	18 0 54. 88	17 4743
15	9. 0	36. 0	38. 3	40. 3	42. 2	44. 2	e	6 10. 28	56 46 " "	VII B 40. 520	17 6 47. 60	17 51 55. 84	17 4745
16	9. 3	39. 1	40. 9	42. 8	44. 8	46. 9	a	12 12. 29	53 42 9. 5 22. 7	III B 42. 910	17 12 49. 20	14 48 26. 73	14 4601
17	9. 2	0. 3	2. 0	4. 0	5. 8	8. 3	a	12 33. 47	53 42 " "	IV A 37. 270	17 13 10. 39	14 53 5. 39	14 4602
18	9. 3	35. 3	37. 0	39. 0	40. 9	43. 0	a	24 8. 49	54 10 10. 0 23. 0	I 48. 175	17 24 45. 44	15 21 13. 62	15 4574
19	8. 7	52. 9	54. 8	56. 5	58. 5	0. 7	a	24 26. 13	54 10 " "	I 49. 700	17 25 3. 08	15 21 42. 51	15 4576
20	8. 6	27. 5	29. 3	31. 2	33. 2	35. 4	a	30 0. 79	54 14 11. 0 24. 3	I 48. 290	17 30 37. 74	−15 25 14. 47	−15 4613
21	8. 7	55. 5	57. 2	59. 2	1. 0	3. 4	a	30 29. 15	56 56 10. 0 24. 8	I 47. 815	17 31 6. 46	−18 7 12. 33	−18 4585
22	......	41. 7	43. 2	45. 1	47. 0	49. 3	a	31 14. 71	54 10 9. 5 22. 3	I 44. 890	17 31 51. 65	15 20 7. 27	15 4621
23	9. 2	19. 5	21. 6	23. 8	28. 3	29. 8	$c_3 d_2$	31 19. 59	55 8 10. 0 23. 5	V 45. 275	17 31 56. 65	16 18 21. 38	16 4569
24	8. 9	35. 6	37. 4	39. 4	41. 3	43. 5	a	34 9. 18	56 2 10. 0 24. 2	I 46. 650	17 34 46. 36	17 12 45. 63	17 4883
25	8. 9	19. 8	21. 8	23. 8	25. 8	28. 0	a	34 53. 57	56 2 " "	I 43. 780	17 35 30. 74	17 11 50. 67	17 4887
26	8. 0	50. 1	52. 3	54. 5	56. 6	58. 7	c	45 54. 45	55 46 10. 0 23. 8	III 46. 230	17 46 31. 56	16 56 33. 23	16 4639
27	9. 0	46. 9	48. 7	50. 6	52. 4	54. 8	a	50 20. 31	55 26 10. 0 24. 3	I B 42. 890	17 50 57. 37	16 32 12. 93	16 4661
28	8. 8	15. 6	17. 5	19. 5	21. 4	23. 7	a	50 49. 19	55 26 " "	I A 42. 910	17 51 26. 26	16 38 38. 57	16 4662
29	9. 0	1. 7	3. 5	5. 5	7. 6	9. 8	a	52 35. 22	55 8 10. 0 24. 0	I 49. 230	17 53 12. 24	16 19 23. 90	16 4673
30	9. 0	6. 1	7. 9	9. 8	11. 9	14. 0	a	53 39. 77	56 36 10. 0 24. 8	I 46. 610	17 54 16. 98	−17 46 38. 04	−17 4981
31	9. 1	34. 4	36. 0	38. 0	39. 9	42. 0	a	54 7. 56	54 34	....	17 54 44. 48	−15 39 47	−15 4764
32	8. 6	12. 0	14. 3	16. 5	18. 6	20. 9	c	54 16. 47	54 34	....	17 54 53. 47	−15 47 48	15 4767

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
33	9.3	58.0	0.1	2.1	4.4	6.6	c	55 2.25	54 34	. . . .	. . . .	17 55 39.17	−15 41 13	−15 4777
34	9.0	24.4	26.5	28.9	31.0	33.1	c	55 28.79	54 34	. . . .	. . . .	17 56 5.70	15 38 45	15 4778
35	7.4	21.1	23.0	25.0	26.9	29.1	a	56 54.82	56 26 10.0 24.3	III	46.730	17 57 32.00	17 36 39.98	17 5001
36	8.9	44.2	46.1	48.1	50.0	52.3	a	0 17.83	55 46 10.0 24.1	I	44.550	18 0 54.91	16 55 53.14	16 4707
37	9.1	33.8	35.4	39.5	41.8	44.0	b_2 c_3	0 43.91	54 28 10.0 23.0	III (A)	42.150	18 1 20.82	15 40 18.10	15 4819
38	9.1	50.3	52.6	54.6	56.9	58.9	c	0 54.67	54 28 " "	V B	42.650	18 1 31.56	15 34 3.69	15 4821
39	9.0	51.4	53.0	55.1	57.0	59.3	a	2 24.94	56 20 10.0 24.2	III	48.980	18 3 2.08	17 31 20.00	17 5035
40	9.4	39.9	41.7	43.7	45.7	47.8	a	3 13.55	56 20 " "	I A	44.000	18 3 50.71	−17 32 56.24	−17 5040
41	9.0	40.5	42.4	44.2	46.1	48.4	a	4 14.18	56 46 10.0 24.6	I	45.460	18 4 51.38	−17 56 11.82	17 5050
42	8.4	48.5	50.2	52.1	54.3	56.4	a	5 21.74	54 4 10.0 22.7	I	43.110	18 5 58.58	15 13 18.19	15 4853
43	9.0	11.6	13.4	15.4	17.4	19.5	a	5 44.91	54 4 " "	III A	49.355	18 6 21.76	15 18 31.78	15 4859
44	8.8	59.0	0.9	3.0	5.1	7.3	c	6 3.07	54 4 " "	III B	49.090	18 6 39.91	15 12 1.22	15 4862
45	8.1	31.2	33.5	35.7	37.7	39.9	c	6 35.61	54 4 " "	III	42.090	18 7 12.45	15 13 0.04	15 4868
46	9.2	29.2	31.4	35.7	37.3	39.9	c_4 d_3	7 27.15	54 40 10.0 23.2	VI	45.460	18 8 4.06	15 50 7.52	15 4878
47	7.8	32.2	34.5	36.7	38.8	40.9	c	8 36.63	54 14 10.0 23.9	III	47.890	18 9 13.49	15 24 50.57	15 4889
48	8.0	23.9	25.6	27.5	29.5	31.8	a	11 57.45	56 28 10.0 24.5	I (B)	43.540	18 12 34.58	17 34 18.63	17 5121
49	8.8	53.5	55.1	57.0	59.0	1.3	a	13 26.99	56 28 " "	I	48.890	18 14 4.12	17 39 12.09	17 5135
50	5.5	42.0	44.0	46.2	48.5	50.5	c	13 46.25	54 42 10.0 23.5	III	46.280	18 14 23.15	15 52 18.65	−15 4927
51	8.5	38.4	40.6	42.8	45.0	47.1	c	14 42.79	56 16 10.0 23.9	III	43.680	18 15 19.89	−17 25 33.30	−17 5151
52	9.2	9.2	11.0	12.9	15.0	17.1	a	15 42.82	56 16 " "	III A	42.715	18 16 19.93	17 28 27.59	17 5159
53	9.1	40.0	41.9	43.8	45.8	48.0	a	16 13.68	56 16 " "	III A	39.710	18 16 50.79	17 27 30.16	17 5164
54	9.0	19.6	21.7	24.0	26.0	28.4	c	16 23.95	56 16 " "	V A	46.620	18 17 1.06	17 29 43.12	17 5167
55	9.1	48.8	50.8	52.7	54.8	57.0	a	18 22.58	56 8 9.2 23.5	I	45.750	18 18 59.66	17 18 8.25	17 5185
56	8.6	24.6	26.5	28.6	30.5	32.7	a	19 58.48	56 58 10.0 25.1	I	47.015	18 20 35.66	18 8 35.27	18 4962
57	9.0	45.5	47.6	49.6	52.0	54.0	c	20 49.75	55 50 10.0 24.0	III	43.950	18 21 26.78	16 59 34.54	17 5199
58	9.0	34.4	36.3	38.1	40.1	42.3	a	22 7.95	55 50 " "	I A	42.860	18 22 44.98	17 2 24.60	17 5207
59	. . . . .	39.6	41.4	43.4	45.4	47.5	a	23 13.03	55 4 10.0 23.7	I B	41.630	18 23 49.94	16 9 32.94	16 4899
60	8.5	11.3	13.2	15.0	17.2	19.4	a	23 44.81	55 4 " "	I A	39.900	18 24 21.73	−16 15 25.25	−16 4903
61	9.0	17.5	19.2	21.3	23.3	25.6	a	24 51.22	56 40 10.0 24.6	I (A)	38.120	18 25 28.34	−17 50 55.89	−17 5221
62	9.4	22.9	24.4	26.4	28.4	30.6	a	25 56.11	55 4 10.0 23.5	I B	44.520	18 26 33.01	16 10 26.63	16 4915
63	8.6	54.0	56.0	58.2	0.6	2.7	c	25 58.31	55 4 " "	III A	46.880	18 26 35.23	16 17 38.73	16 4916
64	8.8	2.0	3.9	5.8	7.8	10.0	a	27 35.70	56 26 10.0 24.5	I	47.970	18 28 12.78	17 36 48.19	17 5236
65	9.0	41.2	43.4	45.5	47.7	49.9	c	27 45.55	56 36 10.0 25.0	V	45.950	18 28 22.66	17 46 13.89	17 5238
66	8.0	38.7	40.7	42.8	45.0	47.1	c	28 42.87	55 54 10.0 24.9	V	44.780	18 29 19.89	17 3 49.11	17 5245
67	9.0	54.0	55.7	57.6	59.7	2.0	a	30 27.48	55 38 10.0 23.8	I	44.600	18 31 4.45	16 47 40.14	16 4953
68	9.1	33.4	35.2	37.1	39.1	41.4	a	31 7.03	56 24 10.0 24.9	I	42.490	18 31 44.10	17 33 2.45	17 5267
69	9.3	24.8	26.6	28.6	30.5	32.8	a	35 58.52	56 46 10.0 24.6	I A	38.220	18 36 35.62	17 56 53.22	17 5292
70	8.9	54.0	55.9	57.7	59.8	2.0	a	36 27.72	56 46 " "	I B	38.710	18 37 4.81	−17 50 36.83	17 5295
71	9.2	59.9	2.0	4.0	6.1	8.5	c	37 4.11	56 26 8.6 23.4	III B	39.690	18 37 41.15	−17 30 54.71	−17 5300
72	8.8	12.2	14.4	16.6	19.0	21.0	c	37 16.65	56 26 " "	V A	43.650	18 37 53.71	17 38 36.96	17 5301
73	8.0	37.5	39.3	41.2	43.2	45.5	a	39 11.15	56 28 10.0 24.6	I	48.370	18 39 48.20	17 38 50.90	17 5310
74	8.9	11.8	13.7	15.6	17.6	19.7	a	39 45.17	54 24 10.0 23.8	III	48.540	18 40 21.95	15 34 49.52	15 5086
75	9.0	56.0	57.8	59.7	1.5	3.8	a	42 29.36	55 12 10.0 24.8	I	43.690	18 43 6.24	16 21 17.22	16 5040
76	9.2	24.5	26.3	28.3	30.3	32.4	a	43 58.12	56 10 9.4 23.7	I	49.190	18 44 35.12	17 21 2.81	17 5336
77	7.3	21.4	23.0	25.1	27.0	29.4	a	44 54.93	56 10 " "	I B	44.260	18 45 31.92	17 16 16.31	17 5347
78	8.6	54.0	55.9	57.9	59.9	2.0	a	45 27.59	55 28 10.0 23.8	III	45.025	18 46 4.49	16 37 43.08	16 5051
79	8.9	46.4	48.1	50.1	52.0	54.4	a	47 19.79	55 8 10.0 23.8	I	42.890	18 47 56.64	16 16 58.85	16 5066
80	9.1	52.8	54.6	56.5	58.4	0.8	a	48 26.43	56 34 10.0 25.2	I B	45.560	18 49 3.45	−17 40 41.77	−17 5372
81	9.1	19.7	21.8	23.5	25.7	27.9	a	48 53.55	56 34 " "	I A	40.210	18 49 30.58	−17 45 25.24	17 5375
82	9.0	54.0	55.7	57.7	59.6	1.8	a	49 27.58	56 34 " "	I	41.140	18 50 4.60	17 42 29.46	17 5381
83	9.0	0.0	2.0	4.2	6.4	8.6	c	50 4.25	55 42 10.0 23.8	V	43.300	18 50 41.16	16 51 10.53	16 5087
84	9.3	35.7	37.5	39.4	41.6	43.8	a	52 9.40	56 26 10.0 25.3	I	48.480	18 52 46.40	17 36 47.78	17 5396
85	8.3	26.3	28.0	30.0	32.2	34.4	a	53 59.98	56 28 10.0 25.4	I	43.920	18 54 36.98	17 37 20.27	17 5409
86	8.6	36.5	38.4	40.4	42.3	44.7	a	56 10.13	55 34 10.0 24.4	I	47.720	18 56 47.01	16 44 28.56	16 5123
87	9.0	12.5	14.4	16.4	18.4	20.6	a	56 46.29	56 38 10.0 25.4	III	43.020	18 57 23.30	17 47 4.29	17 5437
88	8.8	9.0	10.9	13.0	15.0	17.1	a	57 42.86	56 44 10.0 25.3	I	47.460	18 58 19.88	17 54 26.84	17 5446
89	8.8	46.9	48.8	50.6	52.8	54.8	a	58 20.64	56 44 " "	III A	45.330	18 58 57.66	17 57 0.98	18 5193
90	9.3	44.6	46.8	49.0	53.2	54.9	c_3 d_2	58 44.68	55 38 10.0 24.0	V A	44.800	18 59 21.56	−16 50 48.32	−16 5135
91	8.4	17.8	20.0	24.4	26.0	28.7	c_4 d_3	59 15.80	55 38 " "	VI B	39.420	18 59 52.66	−16 42 41.02	−16 5139
92	9.1	27.8	30.0	34.3	35.8	38.7	c_4 d_3	0 25.68	56 54 10.0 25.4	VI A	38.440	19 1 2.71	18 4 51.67	18 5204
93	9.0	14.6	16.8	19.0	20.7	22.7	e	0 48.81	56 54 " "	VII B	45.300	19 1 25.82	18 0 37.38	18 5208
94	9.4	49.3	51.0	53.1	55.0	57.3	a	7 22.65	54 34 10.0 23.5	I	43.740	19 7 59.37	15 43 4.80	15 5279
95	8.4	22.6	24.5	26.5	28.6	30.7	a	7 56.47	56 54 10.0 25.3	III	47.100	19 8 33.47	18 4 18.06	18 5262
96	9.0	21.4	23.5	25.7	27.9	30.0	c	8 25.71	56 44 10.0 25.0	III	45.380	19 9 2.68	17 53 44.43	17 5536
97	7.9	0.9	2.9	5.0	7.2	9.6	c	9 5.13	55 6 10.0 24.4	V	47.340	19 9 41.90	16 16 18.01	16 5220
98	8.9	46.8	48.6	51.0	53.1	55.3	c	9 50.97	54 36 10.0 22.9	V	47.360	19 10 27.68	15 46 15.92	15 5293
99	8.9	39.5	42.0	43.8	45.6	47.7	e	12 13.88	56 14 9.2 23.3	VII	45.440	19 12 50.78	17 23 44.33	17 5573
100	9.4	37.4	39.2	41.0	43.0	45.4	a	14 10.80	55 10 10.0 23.3	III	44.440	19 14 47.56	−16 19 18.74	16 5278
101	5.5	41.7	43.6	45.6	47.5	49.7	a	15 15.50	56 52 10.0 24.8	I	46.850	19 15 52.46	18 2 8.11	−18 5322
102	. . . . .	1.7	3.5	5.5	7.6	9.8	a	16 35.44	56 36 8.8 23.6	I B	46.320	19 17 12.35	17 42 43.20	17 5604
103	9.0	42.0	43.8	45.7	47.7	49.9	a	17 15.66	56 36 " "	I A	40.780	19 17 52.58	17 47 22.94	17 5608
104	9.2	1.1	3.0	5.0	7.0	9.2	a	18 34.88	56 36 " "	I B	43.840	19 19 11.79	17 41 55.17	17 5617
105	8.9	25.3	27.1	29.0	31.0	33.3	a	19 58.90	56 10 10.0 25.0	I	46.310	19 20 35.76	−17 19 53.91	−17 5629

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B.D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	
106	9.0	29.5	31.3	33.2	35.3	37.4	a	22 3.20	56 50 10.0 24.5	I B 42.950	19 22 40.12	−17 55 38.59	−18 5378
107	8.9	59.4	1.0	5.2	7.4	9.7	b_2 c_3	22 9.60	56 50 “ “	III A 43.730	19 22 46.53	18 2 20.61	18 5380
108	8.4	8.9	10.7	12.6	14.6	16.8	a	23 42.30	55 2 10.0 23.5	I 43.490	19 24 19.01	16 10 54.67	16 5333
109	8.4	58.9	1.0	3.4	7.8	9.0	c_3 d_2	26 59.00	55 40 10.0 24.5	V 44.880	19 27 35.77	16 49 25.59	16 5351
110	8.9	47.8	49.8	52.0	56.0	57.6	c_3 d_2	31 47.66	54 2 9.6 22.0	V 48.940	19 32 24.23	−15 12 34.90	−15 5411
111	9.0	43.6	45.4	47.4	49.2	51.5	a	34 16.94	54 38 10.0 22.2	III 43.100	19 34 53.56	−15 46 43.08	15 5428
112	9.3	49.5	51.5	53.3	55.4	57.6	a	35 23.15	55 42 9.5 23.1	III A 40.600	19 35 59.90	16 53 11.46	16 5407
113	9.1	12.6	14.3	16.5	18.3	20.6	a	36 46.13	55 42 “ “	I B 41.810	19 37 22.86	16 47 6.72	16 5421
114	8.7	34.7	36.5	38.5	40.5	42.5	a	38 8.35	56 32 10.0 24 7	I B 45.610	19 38 45.17	17 38 22.07	17 5732
115	9.1	55.2	56.9	58.9	0.7	3.0	a	38 28.75	56 32 “ “	I 42.090	19 39 5.57	17 40 27.19	17 5733
116	9.2	18.0	19.8	22.0	23.8	26.0	a	38 51.75	56 32 “ “	I A 42.370	19 39 28.57	17 43 45.60	17 5736
117	9.2	59.0	0.1	2.3	4.0	6.3	a	40 31.91	55 0 10.0 24.3	III 48.280	19 41 8.55	16 10 21.32	16 5434
118	8.2	33.6	35.6	37.8	40.2	42.0	c	41 37.85	56 34 10.0 24.3	III 45.590	19 42 14.66	17 43 34.33	17 5750
119	9.4	22.4	24.4	26.3	28.3	30.4	a	42 56.18	56 34 “ “	I B 46.075	19 43 32.98	17 40 28.95	17 5755
120	8.9	36.6	38.6	40.5	42.6	44.6	a	44 10.09	54 32 10.0 23.6	I 42.590	19 44 46.66	−15 40 28.12	−15 5479
121	8.9	50.0	51.9	53.6	55.7	58.0	a	45 23.63	56 26 10.0 24.5	I B 42.580	19 46 0.41	−17 31 21.22	−17 5768
122	9.4	7.8	9.8	11.6	13.7	16.0	a	45 41.57	56 26 “ “	III (B) 46.870	19 46 18.35	17 32 44.52	17 5771
123	9.5	40.2	41.9	44.1	46.4	48.3	c	45 44.19	56 26 “ “	V A 46.790	19 46 20.98	17 39 9.93	17 5773
124	8.8	24.4	26.5	28.6	30.9	33.0	c	47 28.69	55 44 10.0 23.7	V 47.990	19 48 5.39	16 54 16.58	17 5785
125	8.8	12.4	14.9	16.7	18.6	20.6	e	47 46.75	56 30 10.0 24.4	VII 48.110	19 48 23.53	17 40 22.87	17 5787
126	9.1	11.3	13.5	15.7	17.7	19.9	c	49 15.63	56 40 10.5 25.5	III 45.080	19 49 52.42	17 49 22.90	17 5795
127	8.9	20.2	22.1	24.4	26.7	28.7	c	50 24.43	56 52 9.2 23.7	III 42.450	19 51 1.24	18 0 31.46	18 5537
128	9.2	3.6	5.7	8.0	10.0	12.3	c	51 7.92	56 12 10.0 24.7	V 44.190	19 51 44.65	17 21 4.81	17 5804
129	8.1	49.5	51.7	53.9	56.0	58.0	c	51 53.83	55 4 10.0 23.5	V 48.060	19 52 30.43	16 14 14.23	16 5469
130	9.4	38.7	40.3	42.5	44.4	46.6	a	53 12.36	56 44 10.0 24.6	III 46.380	19 53 49.14	−17 53 45.67	−18 5557
131	7.8	39.0	41.0	42.8	44.9	46.9	a	54 12.49	55 0 10.0 23.9	III 46.210	19 54 49.07	−16 9 36.52	−16 5478
132	9.1	14.0	16.1	18.3	20.5	22.6	c	54 18.31	55 0 “ “	III 45.430	19 54 51.89	16 9 21.65	16 5479
133	9.5	9.9	12.1	14.2	16.0	18.0	e	54 44.15	56 36 10.0 24.8	VII B 41.125	19 55 20.90	17 40 55.34	17 5827
134	8.4	56.3	58.6	0.5	2.4	4.4	e	55 30.53	56 36 “ “	VII A 48.230	19 56 7.30	17 49 35.67	17 5835
135	8.1	40.9	43.0	45.0	47.2	49.4	c	56 45.11	56 32 10.0 25.0	V B 43.400	19 57 21.85	17 37 36.46	17 5839
136	9.3	57.0	59.1	1.4	3.6	5.8	c	58 1.39	56 32 “ “	III A 45.430	19 58 38.13	17 44 38.53	17 5847
137	8.9	41.8	43.7	45.6	47.6	49.9	a	59 15.59	56 50 10.0 24.8	III 44.310	19 59 52.35	17 59 4.47	18 5590
138	8.8	36.2	37.8	39.9	41.9	44.0	a	0 9.40	54 2 10.0 22.7	III 46.690	20 0 45.86	15 11 40.14	15 5557
139	8.5	39.2	41.4	43.7	45.8	48.0	c	0. 43.63	56 20 10.0 24.7	III 44.000	20 1 20.33	−17 28 56.42	−17 5860

Reduction Elements. Zone 60.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 20.3....	−0.148	−0.373	−0.224	−0.112	−0.355	−0.198
20.5....	−0.075	−0.337	−0.172			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	δ Scorpii		β Scorpii pr.		ψ Ophiuchi		α Scorpii		ζ Ophiuchi		π Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	61 8 2.30		58 20 2.15		58 36 2.50		65 0 1.80		49 12 2.25		60 0 1.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	48.100	6 31.73	47.695	6 24.40	48.990	6 48.81	49.085	6 50.27	43.245	5 1.48	48.650	6 41.87
II Red. to Mer......	.020	1.58	.700	1.61	.945	1.61	.020	1.54	.220	1.70	.570	1.59
VI Inclination	47.920		.500		.805		48.880			−2.04	.430	
VII Refraction.......	.870	1 37.6	.475	1 27.3	.760	1 28.3	.825	1 55.4		1 2.5	.390	1 34.5

	d Sagittarii		Lalande 38458		α² Capricorni	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	57 58 1.60		45 54 1.80		51 42 1.80	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......		5 45.52	45.810	5 48.04	46.165	5 54.70
II Red. to Mer......	45.640	1.64	.770	1.73	.100	1.68
VI Inclination	.525	0.82	.600		45.945	
VII Refraction.......	.480	1 27.2	.540	56.5	.910	1 9.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Scorpii	15 53 47.15	11	− 0.49	+19.78	61 16 13.2	45.8
β Scorpii pr.	15 58 59.68	11	− 0.49	−19.74	58 27 55.5	46.1
Groombridge 750 S. P.	16 2 57.31	5	+ 1.79	[+19.55]	304 14	....
ψ Ophiuchi	16 17 37.33	11	− 0.49	+19.83	58 44 21.2	46.2
α Scorpii	16 22 37.99	11	− 0.49	+19.76	65 8 49.0	45.7
ζ Ophiuchi	16 31 2.63	11	− 0.50	+19.78	49 18 5.9	47.2
π Sagittarii	19 3 11.65	11	− 0.49	+19.84	60 8 19.7	45.9
d Sagittarii	19 11 10.01	11	− 0.50	+19.85	58 5 16.8	46.2
λ Ursae Minoris	19 29 29.54	4	−10.51	[+18.79]	309 58	....
Lalande 38458	20 2 10.62	11	− 0.50	+20.07	46 0 48.1	46.7
α² Capricorni	20 11 54.16	11	− 0.50	+20.00	51 49 7.6	47.0

h 16.214 .... *dt* .... s +19.778
Hourly rate .... + 0.0476

Adopted Equator Point ....38° 56′ 46″.31

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
15 50	29.685	85.2	85.0
16 53	29.685	83.4	82.9
17 58	29.675	80.8	79.8
19 5	29.665	78.7	77.5
20 4	29.655	77.8	76.1

Notes.
82. Fainter close companion, n. f.
130. Fainter companion, s. f.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTION.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	−0.498	16 0	......	+17.762	+17.883	+18.004	+18.126	.....	−13.79	−14.09	−14.38	−14.68
54	0.498	16 30	.....	17.712	17.839	17.966	18.094	.....	12.60	12.88	13.14	13.42
55	0.498	17 0	+17.516	17.647	17.776	17.908	18.040	−10.89	11.13	11.37	11.61	11.85
56	0.497	17 30	+17.434	17.566	17.696	17.830	17.963	− 9.20	9.41	9.61	9.82	10.02
57	−0.496	18 0	......	17.469	17.601	17.733	17.866	.....	7.45	7.62	7.79	7.96
		18 30	......	17.362	17.491	17.620	17.751	.....	5.32	5.45	5.58	5.70
		19 0	......	17.245	17.367	17.491	17.615	.....	3.02	3.11	3.19	3.28
		19 30	......	17.118	17.234	17.351	17.466	....	− 0.61	− 0.65	− 0.69	− 0.74
		20 0	......	+16.985	+17.092	+17.199	+17.306	.....	+ 1.87	+ 1.87	+ 1.87	+ 1.87

APPARENT RIGHT ASCENSION.	*R*					
	53°	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″	″
16 0	71.27	73.91	76.67	79.58	82.62	84.22
16 30	71.38	74.03	76.79	79.71	82.76	84.35
17 0	71.53	74.18	76.95	79.87	82.93	84.53
17 30	71.71	74.37	77.14	80.08	83.14	84.74
18 0	71.91	74.58	77.36	80.30	83.37	84.98
18 30	72.03	74.70	77.48	80.43	83.50	85.11
19 0	72.16	74.83	77.62	80.57	83.66	85.27
19 30	72.26	74.94	77.73	80.69	83.77	85.39
20 0	72.36	75.04	77.84	80.80	83.89	85.51

1894 JULY 25. ZONE 61. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.9	43.3	45.2	47.1	48.9	51.3	a	57 16.67	54 32 10.0 24.3	I	48.010	16 57 55.88	−15 43 24.96	−15 4438
2	9.0	14.1	16.0	18.0	20.2	32.8	a₂ b₁	57 45.49	53 36 10.0 24.0	III	47.520	16 58 24.58	14 47 14.76	14 4531
3	9.2	27.5	29.1	33.3	35.3	37.7	b₂ c₃	58 37.57	54 0 10.0 24.1	III	50.100	16 59 16.71	15 12 4.52	15 4444
4	8.9	41.6	43.4	45.7	49.8	51.5	c₃ d₂	58 41.42	54 0 " "	VI B	46.220	16 59 20.55	15 7 40.60	15 4445
5	8.8	25.4	27.6	29.7	31.8	34.0	c	1 29.71	53 22 10.0 23.9	III	48.750	17 2 8.77	14 33 35.86	14 4550
6	8.8	52.5	54.3	56.1	58.1	0.4	a	3 25.85	55 0 10.0 24.4	I	47.000	17 4 5.11	14 11 4.23	16 4426
7	9.3	47.6	49.4	51.2	53.3	55.5	a	4 20.98	55 0 " "	I A	45.340	17 5 0.25	16 13 45.43	16 4431
8	9.0	40.0	42.3	44.4	46.5	48.6	c	4 44.37	53 54 10.0 24.0	III	48.730	17 5 23.48	15 5 35.36	15 4473
9	8.9	40.3	42.0	44.0	45.9	48.0	a	6 13.45	53 54 " "	I B	49.320	17 6 52.55	15 2 31.88	14 4568
10	9.1	8.4	10.3	12.1	14.1	16.2	a	6 41.59	53 32 10.0 24.3	III	44.580	17 7 20.65	−14 42 14.74	14 4572

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ″ ″		r	h m s	° ′ ″	°
11	8.7	2.5	4.3	6.2	8.1	10.4	a	12 35.72	54 0 10.0 23.9	I B	43.745	17 13 14.81	−15 6 43.10	−15 4514
12	9.2	26.0	28.0	29.6	31.6	34.0	a	12 59.28	54 0 " "	III A	47.835	17 13 38.39	15 14 27.89	15 4516
13	9.0	33.6	35.5	37.6	39.4	41.6	a	30 7.17	55 26 10.0 24.9	I B	47.605	17 30 46.41	16 33 52.82	16 4564
14	9.3	5.9	7.7	9.8	11.8	13.9	a	30 39.45	55 26 " "	I B	43.880	17 31 18.69	16 32 41.69	16 4567^2
15	9.0	43.7	45.8	48.1	50.3	52.5	c	30 48.09	55 26 " "	V A	44.885	17 31 27.34	16 39 29.44	16 4568
16	9.2	0.0	2.0	4.1	6.2	8.5	c	32 4.17	54 46 10.0 24.5	V A	46.590	17 32 43.33	15 59 59.32	15 4627
17	9.0	31.1	33.0	35.0	37.0	39.1	a	35 4.83	56 22 10.0 24.7	I	45.510	17 35 44.18	17 32 25.47	17 4888
18	9.2	12.2	13.6	17.8	19.9	22.1	b_2 c_3	35 22.18	56 22 " "	III A	47.995	17 36 1.54	17 36 27.57	17 4891
19	9.1	6.0	8.3	10.1	12.0	14.0	e	35 40.39	55 16 10.0 25.0	VII	47.360	17 36 19.60	16 27 2.40	16 4592
20	9.0	26.4	28.3	30.1	32.0	34.1	a	49 59.63	54 12 10.0 24.0	I B	43.930	17 50 38.65	−15 18 30.16	−15 4726
21	9.2	1.3	3.1	5.1	7.0	9.3	a	50 34.62	54 12 " "	I A	42.960	17 51 13.65	−15 24 36.87	−15 4731
22	9.1	43.2	44.7	48.9	50.9	53.3	b_2 c_3	50 53.20	54 22 10.0 25.0	III	45.545	17 51 32.24	15 32 15.45	15 4736
23	9.3	15.2	16.9	20.9	23.1	25.3	b_2 c_3	51 25.29	54 22 " "	III (B)	48.420	17 52 4.32	[15 29 57.63]	15 4741
24	8.9	9.2	11.4	13.5	15.6	17.8	c	52 13.51	54 22 " "	III A	46.420	17 52 52.56	[15 35 44.61]	15 4717
25	9.1	47.2	49.0	51.4	53.4	55.6	c	59 51.33	55 32 10.0 24.4	III	(44).030	18 0 30.49	16 41 45.43	16 4706
26	9.0	12.9	14.8	16.6	18.6	20.8	a	0 46.39	55 32 " "	III B	48.730	18 1 25.54	16 40 2.13	16 4711
27	9.3	58.7	0.5	2.6	4.4	6.7	a	1 32.23	55 32 " "	III B	41.720	18 2 11.38	16 37 48.35	16 4718
28	9.5	23.6	25.9	27.9	30.1	32.5	c	2 28.01	55 46 10.0 24.0	III A	48.850	18 3 7.20	17 0 29.53	17 5037
29	9.4	6.8	8.8	10.8	13.0	15.2	c	4 10.93	55 46 " "	V B	37.830	18 4 50.09	16 50 35.15	16 4737
30	9.0	16.1	18.4	20.7	22.7	24.9	c	5 20.57	55 46 " "	V	41.430	18 5 59.74	−16 54 55.54	−16 4747
31	9.0	43.0	44.9	46.8	48.6	50.9	a	7 16.57	56 0 10.0 24.7	I	48.030	18 7 55.78	−17 10 57.84	−17 5074
32	9.1	13.0	15.0	17.3	19.6	21.5	c	7 17.29	56 0 " "	V	44.940	18 7 56.49	17 10 2.49	17 5075
33	9.1	5.2	7.3	9.8	11.8	13.8	c	8 9.59	56 12 10.0 25.1	V	49.410	18 8 48.82	17 23 27.96	17 5080
34	9.0	13.6	15.9	17.8	19.8	21.6	e	8 47.94	55 54 10.0 24.7	V (A)	47.610	18 9 27.13	17 8 5.31	17 5088
35	8.9	43.2	45.7	47.5	49.4	51.4	e	9 17.66	55 54 " "	VII B	42.730	18 9 56.83	17 0 8.19	17 5092
36	8.9	26.8	28.8	30.9	35.4	36.9	c_3 d_2	10 26.75	55 12 10.0 25.4	V A	46.770	18 11 5.85	16 25 47.00	16 4787
37	9.0	59.3	1.4	3.6	5.7	7.9	c	11 3.59	55 12 " "	V B	38.120	18 11 42.66	16 16 36.71	16 4792
38	9.4	38.5	40.2	42.2	44.1	46.4	a	15 12.04	56 10 10.0 25.0	I	43.590	18 15 51.23	17 19 30.44	17 5155
39	9.1	30.0	31.8	33.8	35.7	38.0	a	16 3.62	56 10 " "	I	48.430	18 16 42.81	17 21 2.17	17 5163
40	9.1	18.8	20.7	22.6	24.5	26.9	a	16 52.46	56 10 " "	I	46.090	18 17 31.65	−17 20 17.27	−17 5173
41	9.0	47.3	49.4	51.5	53.7	55.9	c	16 51.57	55 40 10.0 25.2	V B	41.930	18 17 30.68	−16 45 47.84	−16 4852
42	8.8	44.2	46.1	48.0	49.9	52.3	a	18 17.78	55 40 " "	I	48.430	18 18 56.90	16 50 59.89	16 4859
43	9.0	2.0	4.0	5.9	7.9	10.0	a	18 35.64	55 40 " "	III	42.020	18 19 14.75	16 48 59.53	16 4863
44	9.5	35.1	36.8	38.9	40.8	43.0	a	20 8.61	55 40 " "	III	45.960	18 20 47.71	16 50 13.86	....
45	9.0	25.2	27.0	28.9	30.9	33.0	a	21 58.67	55 32 10.0 24.4	I A	47.200	18 22 37.76	16 45 47.26	16 4888
46	8.9	38.1	39.9	42.0	43.9	46.0	a	23 11.64	55 32 " "	I	46.580	18 23 50.72	16 42 21.70	16 4900
47	9.4	20.0	22.0	24.3	26.6	28.9	c	23 24.37	55 32 " "	III A	50.350	18 24 3.46	16 46 48.28	16 4902
48	8.8	1.9	4.0	6.1	8.3	10.4	c	24 6.15	55 32 " "	III	45.660	18 24 45.22	16 42 5.64	16 4905
49	8.7	28.5	30.6	32.9	35.0	37.3	c	24 32.87	55 32 " "	V B	44.370	18 25 11.93	16 38 30.08	16 4907
50	8.5	2.6	4.4	6.4	8.4	10.6	a	26 36.13	55 28 10.0 24.6	I	45.460	18 27 15.18	−16 37 58.79	−16 4922
51	8.5	8.6	10.4	12.4	14.4	16.5	a	27 42.10	55 28 " "	I B	44.780	18 28 21.14	−16 34 33.10	−16 4932
52	8.9	46.6	48.1	52.4	54.6	56.8	b_2 c_3	27 56.74	55 50 10.0 24.4	III	48.320	18 28 35.84	17 0 55.38	17 5240
53	9.1	35.6	37.9	39.9	41.7	43.7	e	28 10.01	55 38 10.0 24.0	V	48.220	18 28 49.08	16 48 54.24	16 4934
54	8.6	40.6	42.5	44.4	46.5	48.6	a	30 14.27	56 6 10.0 25.0	I	49.660	18 30 53.40	17 17 19.13	17 5259
55	9.7	3.1	4.6	8.9	11.1	13.3	b_2 c_3	31 13.25	56 6 " "	III B	50.890	18 31 52.37	17 14 31.62	17 5268
56	9.4	21.0	22.7	26.9	28.5	31.2	c_4 d_3	31 18.45	56 6 " "	VI B	51.220	18 31 57.57	17 14 40.09	17 5269
57	9.5	7.1	8.9	10.8	12.8	15.2	a	34 40.61	55 24 10.0 24.0	I A	48.270	18 35 19.64	16 38 1.44	16 4981
58	8.8	56.4	58.3	0.1	2.0	4.1	a	35 29.80	55 24 " "	I B	39.790	18 36 8.81	16 28 54.18	16 4987
59	9.3	37.6	39.7	41.9	44.0	46.1	c	36 41.86	55 24 " "	III	42.850	18 37 20.87	16 33 6.00	16 4995
60	9.5	1.5	3.1	5.0	6.9	9.2	a	41 34.84	55 54 10.0 24.3	I B	41.790	18 42 13.88	−16 59 31.17	−17 5319
61	8.9	43.8	45.9	47.8	49.8	51.9	a	42 17.57	55 54 " "	I A	50.750	18 42 56.63	−17 8 46.75	−17 5324

Reduction Elements. Zone 61.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 25.3....	−0.111	−0.154	−0.296	−0.080	−0.208	−0.236
25.5....	−0.050	−0.261	−0.177			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		24 Scorpii		20 Ophiuchi		24 Ophiuchi		51 Ophiuchi		Piazzi XVIII. 260		λ Aquilae	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		56 22 2.75		49 26 2.25		61 48 2.20		62 42 2.00		54 16 1.85		43 52 2.15	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	45.630	5 45.06	44.940	5 32.17	46.840	6 7.92	46.290	5 57.29	44.575	5 24.56	47.510	6 20.27
II	Red. to Mer.	.620	1.64	.940	1.70	.820	1.57	.240	1.56	.510	1.66	.455	1.75
VI	Inclination	.430		.765		.630		.090		.370		.280	
VII	Refraction	.415	1 22.4	.740	1 4.1	.615	1 42.2	.045	1 46.3	.330	1 16.7	.255	53.1

		π Sagittarii		d Sagittarii	
		° ′ ″		° ′ ″	
CIRCLE READING.		60 0 2.20		57 58 2.30	
		r	′ ″	r	′ ″
I	Microm. Eq.	48.590	6 40.92	45.640	5 45.21
II	Red. to Mer.	.545	1.59	.625	1.62
VI	Inclination	.380		.455	
VII	Refraction	.330	1 35.5	.410	1 28.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
24 Scorpii	16 35 7.83	11	−0.41	+21.78	56 29 11.8	46.8
20 Ophiuchi	16 43 39.31	11	−0.40	+21.90	49 32 40.2	46.8
24 Ophiuchi	16 50 5.90	11	−0.42	+21.82	61 55 53.9	46.7
ε Ursae Minoris	16 56 32.79	5	−0.51	[+22.19]	316 44	....
51 Ophiuchi	17 24 38.56	11	−0.42	+21.83	62 49 47.1	46.4
51 Cephei s. P.	18 50 16.58	4	+0.25	[+22.83]	306 10	....
Piazzi XVIII. 260	18 55 11.84	11	−0.41	+21.90	54 22 44.8	47.2
λ Aquilae	19 0 18.97	11	−0.39	+21.90	43 59 17.3	47.3
π Sagittarii	19 3 9.54	11	−0.42	+21.91	60 8 20.2	46.4
d Sagittarii	19 11 7.95	11	−0.41	+21.85	58 5 17.3	46.7

h 16.890 .... dt .... s +21.832

Hourly rate .... + 0.0270

Adopted Equator Point ....38° 56′ 46.79″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
16 37	29.955	80.6	80.3
17 40	29.965	79.0	78.7
18 37	29.965	78.0	77.4
19 13	29.965	77.4	76.9

Notes.

27 to 30, 51 Cephei s. P. Clouds.

π Sagittarii, d Sagittarii. Seeing bad.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					$D =$ Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	−0.405	16 30	+17.645	+17.771	+17.896	......	......	−12.08	−12.37	−12.66	.....	....
54	0.406	17 0	17.565	17.695	17.827	+17.956	......	10.66	10.91	11.18	−11.44	....
55	0.408	17 30	+17.472	17.603	17.735	17.868	+18.003	− 8.98	9.21	9.44	9.67	−9.89
56	0.410	18 0	......	+17.496	17.628	17.759	17.892	.....	− 7.27	7.46	7.66	7.86
57	−0.411	18 30	......	......	17.505	17.634	17.764	.....	.....	5.28	5.43	5.59
		19 0	......	......	+17.368	+17.493	+17.615	.....	.....	− 2.93	− 3.04	−3.16

APPARENT RIGHT ASCENSION.	R			
	53° 30′	54° 30′	55° 30′	56° 30′
h m	″	″	″	″
16 30	73.81	76.54	79.43	82.45
17 0	73.93	76.67	79.56	82.58
17 30	74.06	76.81	79.71	82.74
18 0	74.15	76.90	79.80	82.83
18 30	74.25	77.00	79.91	82.95
19 0	74.32	77.07	79.98	83.02

1894 JULY 28. ZONE 62. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	
1	7.8	9.3	11.1	13.0	15.1	17.2	a	30 42.49	53 22 9.5 20.6	I A 42.915	17 30 1.71	−14 34 38.72	−14 4693
2	9.0	11.5	13.4	15.4	17.2	19.3	a	31 44.69	53 22 " "	I B 37.470	17 31 3.89	14 26 29.22	14 4696
3	8.8	51.0	52.8	54.8	56.8	59.0	a	32 24.42	54 46 10.0 20.7	III 45.820	17 31 43.82	15 56 25.64	15 4620
4	9.1	47.8	50.3	52.1	54.0	55.9	e	32 22.46	54 24	....	17 31 41.81	15 36 56	15 4619
5	6.0	58.4	0.4	2.2	4.0	5.9	e	32 32.63	54 24	....	17 31 51.97	15 30 36	15 4622
6	8.9	......	......	......	......	......	......	......	55 36 10.0 22.5	I 47.980	17 52 2	16 46 58.86	16 4667
7	8.1	......	......	......	......	......	......	......	55 36 " "	I A 49.930	17 52 54	16 50 48.80	16 4671
8	8.9	......	......	......	......	......	......	......	53 58 11.5 23.5	III A 49.180	17 53 22	15 12 32.96	15 4752
9	8.0	......	......	......	......	......	......	......	53 58 " "	III 46.665	17 53 48	15 8 31.81	15 4756
10	8.9	......	......	......	......	......	......	......	53 58 " "	III B 41.025	17 54 58	−15 3 31.62	−15 4768
11	9.1	25.0	26.7	28.9	30.8	32.9	a	3 58.35	54 22 10.0 23.1	I 47.240	18 3 17.57	−15 32 36.74	−15 4832
12	9.1	53.3	55.2	57.1	59.1	1.1	a	4 26.53	53 32 9.5 21.3	I 43.180	18 3 45.64	14 41 16.02	14 4906
13	8.8	30.4	31.9	36.1	38.3	40.4	b_2 c_3	4 40.41	53 44 10.0 21.7	III 43.620	18 3 59.54	14 53 27.02	14 4907
14	7.8	5.3	7.5	9.5	11.3	13.3	e	4 39.85	54 8 10.0 21.7	VII 45.260	18 3 59.04	[15 18 2.35]	15 4840
15	9.3	20.8	23.1	25.0	26.9	29.0	e	4 55.43	54 8	....	18 4 14.61	15 16 7	15 4843
16	8.6	29.0	31.0	33.3	35.6	37.7	c	7 33.33	54 52 10.5 23.0	V 44.690	18 6 52.60	16 1 51.55	16 4753
17	9.2	47.9	49.8	51.7	53.7	55.8	a	10 21.04	52 46 10.0 20.7	I 46.990	18 9 40.03	13 56 23.94	13 4893
18	8.9	28.6	30.4	32.4	34.4	36.5	a	11 1.78	53 10 10.0 21.1	I 46.565	18 10 20.82	14 20 16.72	14 4956
19	9.1	59.9	1.3	5.6	7.7	10.0	b_2 c_3	12 9.91	54 34 10.0 22.3	III 49.510	18 11 29.13	15 45 18.21	15 4908
20	8.9	13.2	15.5	17.8	21.8	23.4	c_3 d_2	12 13.35	54 34 " "	VII B 40.870	18 11 32.55	−15 39 24.34	−15 4910
21	8.9	44.4	46.3	48.3	50.3	52.5	a	14 17.86	54 28 10.0 22.7	I A 39.050	18 13 37.05	−15 39 9.48	−15 4923
22	9.0	35.5	37.4	41.8	43.2	46.0	c_4 d_3	14 33.27	53 40 10.0 22.1	VI 42.730	18 13 52.35	14 49 8.06	14 4997
23	8.7	9.1	11.2	13.3	15.5	17.7	c	15 13.37	53 40 " "	V A 45.960	18 14 32.46	14 53 21.47	14 5002
24	9.3	8.1	10.5	12.5	14.3	16.3	e	15 42.71	54 58 10.0 21.8	VII B 43.530	18 15 1.95	16 4 14.23	16 4822
25	9.1	31.1	33.4	35.2	36.8	39.0	e	16 5.47	54 58 " "	VII B 39.680	18 15 24.71	16 3 0.76	16 4828
26	9.0	28.3	30.4	32.5	34.8	37.0	c	17 32.61	54 58 " "	III A 46.245	18 16 51.86	16 11 27.56	16 4846
27	7.9	30.5	32.2	34.1	36.0	38.3	a	21 3.77	54 50 10.0 22.0	I 44.210	18 20 22.98	15 59 32.10	16 4871
28	7.6	15.6	17.7	19.8	22.0	24.2	c	21 19.87	54 32 10.0 22.5	III 43.210	18 20 39.04	15 41 14.22	15 4970
29	9.0	31.8	33.3	35.5	37.4	39.7	a	23 4.93	53 44 10.0 21.7	I 45.550	18 22 23.99	14 53 53.73	14 5065
30	9.2	24.7	26.8	29.0	31.0	33.0	c	23 28.91	53 2 10.0 22.1	III 50.210	18 22 47.88	−14 13 22.49	−14 5067
31	9.1	40.7	42.9	45.0	47.2	49.3	c	23 45.03	53 2 " "	V A 45.495	18 23 4.00	−14 15 7.22	−14 5069
32	8.9	21.0	22.7	24.6	26.7	28.8	a	24 54.05	53 2 " "	III B 43.875	18 24 13.00	14 8 8.97	14 5078
33	9.0	43.5	45.2	47.2	49.1	51.3	[illegible]	26 16.52	52 42 10.0 21.7	I 47.170	18 25 35.43	13 52 20.59	13 5013
34	6.0	46.3	48.0	50.0	52.1	54.2	a	27 19.49	53 34 10.0 21.2	I 42.520	18 26 38.51	14 42 53.48	14 5098
35	9.0	36.4	38.2	40.1	42.0	44.2	a	28 9.45	52 48 10.0 23.2	III A 39.390	18 27 28.37	13 59 7.36	14 5102
36	8.5	45.9	48.1	50.1	52.4	54.5	c	28 50.21	53 20 10.0 22.7	III 46.010	18 28 9.19	14 30 1.20	14 5110
37	8.7	40.4	42.0	44.0	46.0	48.2	a	31 13.38	52 42	....	18 30 32.28	13 54 52	13 5046
38	8.7	14.2	16.5	18.5	20.7	22.7	c	31 18.53	52 42	....	18 30 37.41	13 48 53	13 5047
39	8.1	7.4	9.5	11.7	13.9	16.0	c	36 11.71	52 48 10.0 23.3	III 44.095	18 35 30.60	13 57 20.51	13 5071
40	9.0	12.7	14.6	16.4	18.5	20.6	a	37 45.91	53 22 10.0 21.2	I A 41.745	18 37 4.87	−14 33 46.82	−14 5161
41	9.2	31.1	33.0	35.0	36.9	39.0	a	38 4.35	53 22 " "	III (A) 39.980	18 37 23.31	−14 33 14.78	−14 5162
42	9.0	7.0	8.8	10.8	12.8	15.0	a	38 40.23	53 22 " "	I A 37.010	18 37 59.18	14 32 16.31	14 5165
43	9.1	48.2	50.3	52.4	54.6	56.8	c	39 52.47	53 22 " "	III B 41.485	18 39 11.41	14 27 17.25	14 5172
44	9.0	11.8	13.5	15.5	17.5	19.7	a	41 45.00	53 48 10.0 22.6	I 43.890	18 41 3.99	14 57 14.48	14 5186
45	8.5	44.9	47.0	49.1	51.3	53.6	c	41 49.19	53 48 " "	III A 45.860	18 41 8.19	15 1 6.87	15 5091
46	8.9	12.1	13.8	15.7	17.8	20.0	a	43 45.31	54 2 10.0 22.0	I B 44.720	18 43 4.32	15 8 17.50	15 5100
47	8.9	36.5	38.3	40.4	42.3	44.5	a	44 9.84	54 2 " "	I A 48.330	18 43 28.86	15 15 51.48	15 5102
48	9.0	9.2	11.0	12.9	14.9	17.0	a	44 42.43	54 2 " "	I B 49.250	18 44 1.44	15 9 43.31	15 5107
49	9.4	24.7	26.8	29.2	31.3	33.5	c	45 29.11	54 12 10.0 22.1	V 50.650	18 44 48.14	15 23 25.77	15 5113
50	9.2	48.6	50.9	53.0	55.3	57.4	c	45 53.05	54 12 " "	V 47.110	18 45 12.08	−15 22 18.21	−15 5117
51	9.4	33.0	35.0	37.3	39.4	41.6	c	46 37.27	54 12 " "	V B 44.030	18 45 56.28	−15 18 6.92	−15 5125
52	9.2	45.2	47.4	49.6	51.7	53.8	c	50 49.55	53 52 10.0 22.2	V B 39.350	18 50 8.50	14 56 35.21	14 5228
53	.....	41.0	43.2	45.0	47.3	49.4	c	51 45.19	53 52 " "	VII 37.580	18 51 4.14	14 59 14.95	15 5154
54	9.4	42.7	44.6	47.0	49.1	51.2	c	18 46.93	52 58 10.0 21.6	VI B 39.340	19 18 5.64	14 2 21.34	14 5416
55	9.3	52.5	54.8	56.6	58.5	0.5	e	19 27.21	52 58 " "	VII A 48.480	19 18 45.93	14 11 41.00	14 5421
56	5.0	49.2	51.5	53.4	55.2	57.2	e	20 23.94	52 58 " "	V B 50.020	19 19 42.65	14 5 43.24	14 5428
57	9.2	21.0	23.4	25.2	27.0	29.0	e	21 55.73	53 12 10.0 22.1	VII 44.460	19 21 14.46	−14 21 11.49	−14 5437

Reduction Elements. Zone 62.

1894.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
July 28.3....	+0.036	−0.343	−0.266	+0.082	−0.320	−0.240
28.5....	+0.127	−0.298	−0.214			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		20 Ophiuchi		η Ophiuchi		ξ Ophiuchi		ο Serpentis		λ Aquilae		π Sagittarii	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		49 26 1.45		54 26 1.45		59 50 1.40		51 38 0.65		43 52 0.95		60 0 1.00	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	45.170	5 36.23	44.150	5 16.70	44.350	5 19.89	49.170	6 51.98	47.655	6 23.58	48.770	6 44.13
II	Red. to Mer.	.145	1.70	.110	1.65	.260	1.59	.125	1.68	.640	1.75		1.56
VI	Inclination	44.970		43.950		.130		48.945		.475		.570	0.55
VII	Refraction	.950	1 3.3	.920	1 15.8	.060	1 33.3	.930	1 8.8	.425	52.6	.550	1 34.6

		20 Aquilae		d Sagittarii		h Sagittarii	
		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		46 58 1.00		57 58 1.35		63 56 0.80	
		r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	42.650	4 47.94	45.870	5 49.27		5 56.30
II	Red. to Mer.	.595	1.72	.810	1.62		1.55
VI	Inclination	.430		.670		46.140	2.04
VII	Refraction	.410	58.6	.630	1 27.3	.090	1 51.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
20 Ophiuchi	16 44 59.09	11	−0.31	−57.98	49 32 42.7	49.5
ε Ursae Minoris	16 57 51.80	8	+0.10	[−57.86]	316 44	....
η Ophiuchi	17 5 19.12	11	−0.31	−58.08	54 32 35.6	49.0
ξ Ophiuchi	17 15 40.34	11	−0.31	−58.00	59 56 56.2	49.2
ο Serpentis	17 36 28.65	11	−0.31	−58.00	51 46 3.1	49.2
λ Aquilae	19 1 38.88	11	−0.32	−58.07	43 59 18.9	49.1
π Sagittarii	19 4 29.35	8	−0.31	−58.00	60 8 21.8	48.0
20 Aquilae	19 7 57.24	11	−0.31	−58.05	47 3 49.3	49.0
d Sagittarii	19 12 27.61	11	−0.31	−57.90	58 5 19.5	48.9
λ Ursae Minoris	19 30 30.06	5	+3.38	[−59.14]	309 58	....
h Sagittarii	19 31 17.32	11	−0.31	−57.98	64 3 52.3	49.2

h 17.178 .... *dt* .... s −58.015

Hourly rate .... + 0.0074

Adopted Equator Point .... ° ′ ″ 38 56 49.01

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
16 46	29.875	85.6	85.1
17 38	29.885	83.3	83.0
19 14	29.875	81.5	80.2
20 4	29.865	80.6	79.3

Note.

52, 53. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. S. to 1894.0				
			52°	53°	54°	55°	56°	52°	53°	54°	55°	56°
°	s	h m	s	s	s	s	s	″	″	″	″	″
52	−0.312	17 30	......	+17.473	+17.603	+17.736	+17.868	....	−8.83	−9.07	−9.32	−9.56
53	0.311	18 0	+17.231	17.360	17.489	17.621	17.753	−6.70	6.90	7.11	7.32	7.52
54	0.311	18 30	17.109	17.235	17.363	17.491	+17.619	4.61	4.79	4.95	5.12	−5.29
55	0.310	19 0	16.980	17.102	17.224	+17.345	......	2.37	2.50	2.62	−2.76	....
56	−0.309	19 30	+16.846	+16.961	+17.075	......	......	−0.02	−0.11	−0.20	....	....

APPARENT RIGHT ASCENSION.	*R*				
	52° 30′	53°	54°	55°	56°
h m	″	″	″	″	″
17 30	70.62	71.90	74.56	77.34	80.28
18 0	70.75	72.03	74.70	77.48	80.43
18 30	70.86	72.14	74.82	77.61	80.56
19 0	70.99	72.28	74.95	77.75	80.70
19 30	71.07	72.36	75.04	77.84	80.80

1894 SEPTEMBER 20. ZONE 63. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	......	11.6	13.7	15.5	17.6	19.6	a	26 45.09	54 32 10.0 24.5	III B 37.675	18 26 43.04	−15 36 22.66	−15 5003
2	8.8	39.7	41.4	43.2	45.2	47.6	a	7 12.75	53 14 9.7 23.6	I 47.640	19 7 10.18	14 24 21.47	14 5327
3	8.7	50.4	52.5	54.6	56.8	58.9	c	7 54.65	52 44 10.0 23.7	V 47.980	19 7 52.01	13 54 29.94	13 5275
4	9.0	22.0	24.0	25.9	27.8	29.9	a	9 55.20	52 56 10.0 23.9	I 45.060	19 9 52.57	14 5 30.83	14 5352
5	8.8	27.8	29.6	31.5	33.6	35.6	a	11 1.26	55 28 10.0 24.9	I 42.860	19 10 58.91	16 36 55.32	16 5240
6	8.6	14.2	15.9	17.8	19.6	22.0	a	12 47.17	52 50 10.0 23.8	I 46.910	19 12 44.50	14 0 4.58	14 5377
7	5.5	16.3	18.2	20.5	22.6	24 8	c	13 20.49	54 36 10.0 24.6	III B 45.740	19 13 18.02	15 42 36.26	15 5310
8	9.0	0.2	2.2	4.4	6.6	8.8	c	14 4.45	54 36 " "	V A 47.525	19 14 1.97	15 49 36.85	15 5314
9	8.7	22.8	25.0	26.9	28.7	30.7	e	14 57.48	52 46 10.0 23.8	VII 45.440	19 14 54.78	13 55 40.44	14 5397
10	8.3	43.3	45.4	47.5	49.7	51.8	c	16 47.55	52 46 7.7 21.4	III 44.470	19 16 44.83	−13 55 15.79	−14 5407
11	8.8	5.7	7.6	9.3	11.2	13.5	a	22 38.85	53 44 10.0 23.2	I 44.560	19 22 36.19	−14 53 17.66	−14 5439
12	8.6	34.0	35.6	37.6	39.6	41.8	a	24 7.00	52 56 10.0 24.3	III 47.180	19 24 4.23	14 6 7.36	14 5445
13	9.3	45.6	47.5	49.8	52.0	53.9	c	24 49.77	52 56 " "	VI B 38.580	19 24 46.98	14 0 13.37	14 5448
14	9.0	37.5	39.2	41.1	43.2	45.3	a	27 10.75	54 22 10.0 23.5	I 47.220	19 27 8.12	15 32 8.17	15 5382
15	8.4	38.0	40.1	42.3	44.3	46.6	c	27 42.27	52 50 10.0 23.6	III 47.580	19 27 39.46	14 0 12.93	14 5461
16	8.3	21.0	23.3	25.5	27.6	29.8	c	28 25.45	56 22 10.0 24.6	V 46.400	19 28 23.03	17 32 1.38	17 5672
17	9.3	15.3	17.2	19.2	21.1	23.3	a	30 48.77	54 50 10.0 23.7	I 43.660	19 30 46.15	15 59 0.24	16 5371
18	6.3	40.1	42.0	43.9	45.8	48.0	a	32 13.26	53 2 10.0 23.0	I 43.380	19 32 10.42	14 10 49.59	14 5480
19	7.6	58.5	0.4	2.3	4.2	6.5	a	33 31.64	52 44 9.5 22.5	I 46.530	19 33 28.75	13 53 47.83	13 5427
20	8.9	40.3	42.4	44.4	46.3	48.4	a	34 13.67	53(10) 10.0 23.4	I B 42.570	19 34 10.82	−14 15 21.67	−14 5496
21	7.0	56.6	58.5	0.4	2.3	4.4	a	34 29.75	53(10) " "	III B 45.785	19 34 26.90	−14 16 24.48	−14 5498
22	......	30.2	32.1	34.0	36.0	38.2	a	35 3.42	53(10) " "	I 46.350	19 35 0.57	14 19 45.51	14 5500
23	9.1	52.6	54.3	56.3	58.1	0.4	a	36 25.66	53(10) " "	I 49.105	19 36 22.80	14 20 37.39	14 5511
24	9.4	23.4	25.6	27.9	30.0	32.1	c	36 27.81	53(10) " "	V 42.080	19 36 24.94	14 18 27.11	14 5512
25	7.3	22.9	25.0	27.1	29.2	31.5	c	37 27.15	53 18 10.0 23.0	V 47.170	19 37 24.29	14 28 3.71	14 5518
26	8.9	48.2	50.4	52.4	54.7	56.9	c	38 52.53	53 18 " "	III 46.540	19 38 49.66	14 27 49.54	14 5527
27	8.7	55.2	57.0	59.0	0.9	3.0	a	40 28.30	52 58 10.0 24.0	I B 41.550	19 40 25.37	14 2 59.62	14 5537
28	9.1	30.3	32.2	34.4	36.6	38.7	c	40 34.45	52 58 " "	III A 41.980	19 40 31.52	14 9 34.87	14 5539
29	9.6	26.4	28.1	30.1	32.1	34.3	a	41 59.49	52 58 " "	III A 39.310	19 41 56.55	14 8 43.50	14 5548
30	6.0	24.9	26.8	29.0	31.1	33.4	c	42 29.05	52 48 10.0 23.2	V 43.950	19 42 26.08	−13 56 59.39	−14 5555
31	8.1	19.3	21.1	23.0	25.0	27.1	a	44 52.39	52 58 10.0 23.2	I A 45.200	19 44 49.43	−14 10 32.42	−14 5565
32	9.3	53.8	55.7	57.8	59.9	2.0	c	44 57.85	52 58 " "	III B 45.340	19 44 54.87	14 4 11.34	14 5566
33	9.4	20.1	21.9	23.9	25.7	28.0	a	46 53.19	52 50 10.0 24.5	I 46.490	19 46 50.19	13 59 43.34	14 5576
34	7.8	34.9	36.6	38.6	40.6	42.8	a	48 8.03	53 16 10.0 23.2	I 47.330	19 48 5.06	14 25 59.22	14 5581
35	7 9	50.0	51.8	53.7	55.6	57.7	a	49 23.01	52 40 10.0 23.5	I 43.380	19 49 19.95	13 48 42.32	13 5512
36	9.0	55.5	57.7	59.8	1.9	4.0	c	49 59.79	52 40 " "	III 46.040	19 49 56.73	13 49 34.45	13 5518
37	9.6	7.1	9.0	11.0	12.9	15.1	a	51 40.51	54 24 10.0 24.2	III 42.620	19 51 37.62	15 32 33.36	15 5512
38	9.0	10.3	12.2	14.2	16.1	18.3	a	52 43.57	53 26 10.0 23.0	I 45.120	19 52 40.57	14 35 15.75	14 5601
39	8.6	19.6	21.9	23.8	25.6	27.5	e	52 54.05	54 52 10.0 23.7	V (44).400	19 52 51.19	16 1 9.39	16 5471
40	9.0	12.8	15.0	17.0	19.2	21.5	c	54 17.11	54 52 " "	III B 46.300	19 54 14.23	−15 58 31.09	−16 5477
41	8 6	36.5	38.4	40.3	42.3	44.5	a	55 9.95	54 52 " "	III 40.420	19 55 7.07	−15 59 51.16	−16 5480
42	5.5	53.0	54.3	56.2	58.2	0.4	a	56 25.68	52 46 10.0 22.5	III 43.950	19 56 22.57	13 54 52.06	14 5618
43	9.5	24.9	26.8	28.7	30.6	32.9	a	57 58.15	53 32 10.5 24.0	I 43.610	19 57 55.11	14 40 46.06	14 5626
44	9.1	21.1	23.3	25.4	27.5	29.8	c	1 25.43	53 36 10.0 23.6	V 46.310	20 1 22.35	14 45 39.34	14 5640
45	9.0	40.7	42.8	45.0	47.2	49.3	c	4 45.01	52 42 10.0 23.5	III 43.410	20 4 41.81	13 50 39.09	13 5598
46	8.7	24.3	26.4	28.3	30.3	32.4	a	5 57.62	52 54 10.5 24.5	I 49.720	20 5 54.43	14 4 38.18	14 5664
47	9.4	36.6	38.4	40.5	42.8	45.0	c	6 40.67	52 54 " "	V B 43.560	20 6 37.47	13 59 31.72	14 5666
48	9.3	29.7	32.2	34.0	35.8	37.9	e	7 4.57	52 54 " "	V B 40.170	20 7 1.35	13 58 27.07	14 5668
49	9.3	13.3	15.6	17.4	19.3	21.3	e	7 48.03	52 54..........	....	20 7 44.80	13 58 46	14 5671
50	9.3	40.2	42.4	44.2	46.0	48.2	e	11 14.88	52 40 9.7 22.7	VII B 35.740	20 11 11.59	−13 43 0.83	−13 5627
51	9.0	6.5	8.3	10.1	12.2	14.5	a	13 40.00	55 40 10.0 23.8	III 43.000	20 13 36.99	−16 48 35.80	−16 5560
52	8.7	14.6	16.7	18.8	23.0	24.5	c_3 d_2	14 14.57	52 38 10.0 22.5	V 41.370	20 14 11.26	13 45 57.86	13 5637
53	8.4	2.1	4.2	6.4	8.5	10.6	c	16 6.37	55 26 10.0 24.0	III 46.540	20 16 3.31	16 35 41.81	16 5570
54	9.3	1.6	3.5	5.5	7.4	......	a	17 35.00	54 26 10.0 23.5	I 42.020	20 17 31.83	15 34 10.54	15 5641
55	8.0	......	......	......	......	......	......	....	52 34 10.0 23.2	III 45.100	20 18 33	13 43 5.89	13 5661
56	......	10.9	12.6	14.6	16.5	18.7	a	35 43.92	52 42 10.0 23.3	V 45.910	20 35 40.39	13 51 17.64	14 5815
57	9.0	6.9	8.7	10.5	12.5	14.8	a	39 40.29	55 14 10.0 23.8	III 47.700	20 39 36.94	16 23 55.54	16 5689
58	8.8	23.1	24.9	27.0	28.8	31.0	a	40 56.68	55 54 10.0 24.7	I 47.260	20 40 53.38	17 3 47.21	17 6080
59	8.2	50.6	52.7	54.7	56.8	59.3	c	41 54.83	54 54 10.0 23.4	III B 41.950	20 41 51.42	15 58 51.99	16 5695
60	9.0	9.5	11.5	13.8	17.9	19.8	c_3 d_2	42 9.50	54 54 " "	VI 47.510	20 42 6.09	−16 3 52.41	−16 5697
61	8.2	46.2	48.0	50.1	51.9	54.1	a	45 19.41	53 26 9.0 22.0	I 43.330	20 45 15.84	−14 34 22.73	−14 5864
62	......	46.1	48.0	50.1	52.3	54.4	c	45 50.19	53 4 10.0 23.4	V A 50.070	20 45 46.59	14 17 47.53	14 5866
63	8.6	31.0	33.2	35.1	36.9	39.0	e	46 5.67	53 4 " "	VII B 37.620	20 46 2.05	14 7 26.58	14 5867
64	8.9	1.0	3.0	5.2	7.4	9.5	c	47 5.23	53 4 " "	V B 40.480	20 47 1.60	14 8 19.31	14 5871
65	9.0	42.0	43.8	45.9	47.9	49.9	a	49 15.20	53 2 10.0 23.4	I 47.440	20 49 11.56	14 11 39.98	14 5882
66	9.1	47.7	49.6	51.5	53.6	55.6	a	50 20.85	52 40 10.0 23.2	I 43.390	20 50 17.16	13 48 21.59	13 5793
67	9.3	18.0	19.7	21.6	23.6	25.8	a	51 51.04	53 2 10.0 23.1	I 46.350	20 51 47.36	14 11 18.30	14 5893
68	9.0	3.0	5.0	6.9	8.8	10.9	a	52 36.19	52 52 10.0 22.7	I 44.900	20 52 32.49	14 0 49.89	14 5895
69	8.0	14.5	16.2	18.2	20.1	22.3	a	54 47.52	52 44 10.0 22.1	III 46.210	20 54 43.79	13 53 15.38	14 5907
70	6.5	8.4	10.0	12.0	14.1	16.2	a	55 41.40	52 44 " "	I A 42.600	20 55 37.66	−13 55 17.83	−14 5908

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
71	8.9	41.9	43.6	45.6	47.5	49.7	a	56 14.92	52 44 10.0 22.1	I	48.560	20 56 11.18	−13 53 57.88	−14 5911
72	9.2	38.1	40.1	42.0	44.0	46.2	a	58 11.37	52 58 10.0 22.6	I	43.890	20 58 7.62	14 6 29.22	14 5921
73	8.7	27.9	29.7	31.7	33.6	35.8	a	59 1.30	54 54 10.0 23.7	III	41.750	20 58 57.69	16 1 55.61	16 5780
74	9.0	35.3	37.4	39.6	41.7	43.9	c	59 39.59	53 24 10.0 23.0	III	44.020	20 59 35.86	14 32 34.37	14 5925
75	8.1	38.4	40.3	42.1	44.1	46.4	a	1 11.52	52 46 10.0 22.8	I	43.380	21 1 7.72	13 54 18.31	14 5932
76	8.1	11.1	12.8	14.9	16.8	19.0	a	2 44.30	53 34 9.5 22.5	I	47.050	21 2 40.55	14 43 29.31	14 5940
77	8.5	3.8	5.3	7.4	9.2	11.4	a	4 36.79	53 32 9.6 22.6	I	44.060	21 4 33.01	14 40 31.91	14 5949
78	9.4	8.7	10.6	12.5	14.4	16.8	a	5 42.14	54 46 9.4 22.8	I	42.560	21 5 38.44	15 54 6.22	16 5814
79	8.2	23.3	25.4	27.4	29.6	31.8	c	6 27.51	52 58 10.0 22.6	V	44.835	21 6 23.67	14 6 48.37	14 5954
80	9.0	15.9	17.7	19.6	21.6	23.7	a	7 48.98	52 58 " "	I	41.820	21 7 45.13	−14 5 47.20	−14 5963
81	8.9	2.3	4.0	6.0	8.0	10.0	a	8 35.35	52 58 " "	I	42.960	21 8 31.48	−14 6 8.67	−14 5970
82	9.2	2.5	4.5	6.6	8.9	11.0	c	9 6.71	53 38 9.8 21.4	V B	46.220	21 9 2.88	14 44 2.61	14 5974
83	8.8	29.3	31.0	33.0	35.2	37.3	a	10 2.55	53 38 " "	III A	41.520	21 9 58.72	14 48 56.72	15 5934
84	9.2	6.0	7.7	9.6	11.7	13.9	a	13 39.11	53 16 10.0 21.6	III	46.630	21 13 35.21	14 25 19.24	14 5992
85	9.3	3.7	5.7	8.0	10.0	12.3	c	14 7.95	53 16 " "	III A	46.750	21 14 4.05	14 28 34.49	14 5996
86	6.0	22.8	24.9	27.0	31.3	32.9	c_3 d_2	14 22.82	53 16 " "	VI	49.810	21 14 18.92	14 26 21.95	14 5997
87	9.0	46.6	48.6	50.8	53.0	55.0	c	16 50.81	52 46 10.0 23.0	III B	43.970	21 16 46.84	13 51 14.97	14 6007
88	7.6	23.4	25.3	27.0	29.0	31.3	a	17 56.47	52 46 " "	I A	40.290	21 17 52.49	13 56 28.37	14 6010
89	9.3	24.0	25.9	27.8	29.8	32.0	a	18 57.21	53 10 10.0 23.1	III B	42.770	21 18 53.24	14 14 52.64	14 6015
90	9.2	36.8	38.5	40.4	42.4	44.7	a	20 9.89	53 10 " "	I A	48.740	21 20 5.92	−14 23 9.66	−14 6022
91	9.4	23.9	25.7	27.5	29.5	31.8	a	20 57.08	53 48 10.0 23.0	III	41.730	21 20 53.13	−14 55 46.18	15 5982
92	9.3	30.1	32.0	33.9	35.9	38.0	a	22 3.43	54 10 10.0 22.8	I	44.500	21 21 59.50	15 18 37.66	15 5987
93	9.3	4.4	6.3	8.0	10.0	12.3	a	22 37.65	54 10 " "	I B	46.630	21 22 33.71	15 16 5.85	15 5990
94	9.2	51.2	53.0	54.9	56.8	59.0	a	23 24.42	54 10 " "	I B	45.060	21 23 20.47	15 15 35.79	15 5992
95	8.9	1.5	3.6	5.8	8.0	10.0	c	25 5.79	53 44 10.0 21.7	V	42.050	21 25 1.80	14 51 52.11	15 5997
96	9.4	25.8	27.5	29.4	31.5	33.7	a	26 58.95	53 34 10.0 21.8	I	41.210	21 26 54.92	14 41 31.94	14 6055
97	9.1	11.4	13.5	15.5	17.7	19.8	c	27 15.59	53 46 10.0 22.7	V	44.210	21 27 11.57	14 54 33.28	15 6005
98	9.5	24.0	25.8	28.0	30.3	32.5	c	28 28.13	54 12 10.0 23.5	V	46.210	21 28 24.13	15 21 12.59	15 6008
99	9.3	3.8	6.2	8.0	9.9	11.7	e	29 38.60	52 34 10.0 21.6	VII	45.720	21 29 34.48	13 42 59.39	13 5968
100	8.8	16.6	18.6	20.9	23.0	25.0	c	31 20.83	52 46 10.0 22.1	V	43.800	21 31 16.70	−13 54 21.73	−14 6080
101	9.2	40.3	42.3	44.4	46.5	48.6	c	32 44.43	52 30 10.0 22.7	III	49.420	21 32 40.27	−13 40 6.40	−13 5980
102	9.1	9.4	11.3	13.1	15.0	17.3	a	36 42.64	53 56 10.0 21.8	III	44.440	21 36 38.52	15 4 33.65	15 6040
103	9.0	3.7	5.6	7.5	9.4	11.6	a	37 36.85	53 0 10.0 21.3	III	41.760	21 37 32.66	14 7 40.04	14 6110
104	9.3	5.6	7.3	9.3	11.3	13.4	a	38 38.71	53 16 10.2 22.4	III	44.270	21 38 34.53	14 24 28.89	14 6113
105	9.3	50.5	52.4	54.1	56.3	58.4	a	39 23.67	53 16 " "	I	46.530	21 39 19.48	14 25 9.96	14 6114
106	8.8	51.9	53.7	55.5	57.6	59.7	a	40 24.93	52 40 10.0 22.2	III	43.060	21 40 20.70	13 48 3.82	14 6121
107	9.1	18.2	19.9	21.7	23.7	25.8	a	41 51.13	52 48 10.0 22.6	III A	38.830	21 41 46.89	13 57 56.63	14 6125
108	8.9	37.8	39.5	41.5	43.2	45.5	a	43 10.86	53 30 10.0 21.2	I	42.170	21 43 6.65	14 37 46.05	14 6128
109	9.3	26.8	29.0	31.1	33.3	35.4	c	43 31.13	53 0 10.0 21.7	V A	43.750	21 43 26.89	14 11 31.44	14 6131
110	8.6	1.6	3.6	5.8	7.9	10.0	c	44 5.79	53 0 " "	V B	38.890	21 44 1.53	−14 3 33.48	−14 6133
111	9.1	12.0	14.0	15.9	18.0	20.1	a	45 45.45	54 8 10.0 22.4	I	42.830	21 45 41.24	−15 16 0.35	−15 6078
112	9.2	26.8	28.8	30.9	33.1	35.3	c	46 30.99	53 16 10.0 21.3	III	42.450	21 46 26.72	14 23 51.98	14 6145
113	9.2	54.1	56.0	57.9	59.7	1.9	a	47 27.25	53 16 " "	III	41.950	21 47 22.97	14 23 42.29	14 6148
114	9.5	0.5	2.5	4.5	6.4	8.6	a	48 33.83	53 16 " "	III	45.320	21 48 29.54	14 24 46.19	14 6153
115	9.4	56.3	58.0	0.0	1.8	4.0	a	50 29.38	53 26 10.0 22.0	I A	45.860	21 50 25.08	14 38 8.27	14 6160
116	7.7	13.4	15.2	17.1	19.1	21.3	a	50 46.56	53 26 " "	III B	42.230	21 50 42.26	14 30 35.44	14 6163
117	9.3	7.7	9.5	11.5	13.5	15.7	a	51 40.93	53 26 " "	I	47.030	21 51 36.62	14 35 17.13	14 6170
118	7.6	37.0	38.9	40.8	42.7	44.9	[illegible]	53 10.10	52 36 10.4 22.7	I	42.300	21 53 5.72	13 43 45.28	13 6064
119	9.7	27.3	29.1	31.4	33.4	35.6	c	53 31.37	52 36 " "	V B	42.620	21 53 26.98	13 40 42.35	13 6065
120	8.0	37.0	38.6	40.7	42.7	44.9	a	56 10.34	54 56 10.0 22.3	I	47.700	21 56 6.05	−16 5 33.07	−16 5998
121	9.0	13.5	15.7	17.5	19.4	21.3	e	56 47.93	54 18 10.0 22.3	VII	47.470	21 56 43.61	−15 27 31.83	−15 6121
122	8.0	57.7	59.7	1.9	4.0	6.4	c	58 1.95	54 18 " "	III	43.040	21 57 57.61	15 26 4.22	15 6129
123	9.2	57.7	59.7	1.9	4.0	6.3	c	59 1.93	53 24 10.0 22.0	III	45.580	21 58 57.54	14 32 49.88	14 6203
124	9.0	33.5	35.7	37.8	42.0	43.5	c_3 d_2	2 33.54	52 56 10.0 22.0	VI	43.800	22 2 29.07	14 4 16.59	14 6214
125	8.0	28.5	30.6	32.6	36.9	38.5	c_3 d_2	3 28.47	52 38 10.0 21.5	VI	47.390	22 3 23.99	13 47 23.75	14 6218
126	9.4	21.6	23.6	25.8	28.0	30.2	c	4 25.85	52 28 10.0 21.4	V	47.380	22 4 21.35	13 37 22.17	13 6116
127	9.2	33.8	35.7	37.5	39.4	41.7	a	6 6.86	52 34 10.0 22.8	I	46.560	22 6 2.35	13 43 3.84	13 6124
128	9.2	58.3	0.1	2.1	4.0	6.3	a	7 31.43	52 50 10.0 23.2	I	42.070	22 7 26.91	13 57 39.01	14 6232
129	9.4	58.4	0.4	2.2	4.1	6.4	a	8 31.77	54 22 10.0 22.5	I B	40.840	22 8 27.31	15 26 6.81	15 6168
130	7.5	44.4	46.2	48.2	50.1	52.3	a	9 17.73	54 22 " "	III A	50.835	22 9 13.28	−15 35 44.06	−15 6169
131	7.3	10.2	12.2	13.9	15.9	18.0	a	13 43.29	52 40 10.0 22.2	III	44.280	22 13 38.70	−13 48 20.98	−14 6255
132	9.4	6.0	7.8	9.7	11.7	13.9	a	15 39.10	52 56 10.0 23.2	I	46.730	22 15 34.50	14 5 6.69	14 6264
133	8.9	29.9	31.8	33.6	35.8	38.0	a	17 3.37	54 48 10.0 23.0	I	47.480	22 16 58.83	15 57 25.58	16 6069
134	9.3	10.8	12.7	14.8	17.2	19.3	c	17 14.97	54 48 " "	III B	44.380	22 17 10.43	15 53 16.03	16 6071
135	6.8	35.6	37.7	39.7	41.5	43.6	e	19 10.26	52 54 10.0 22.8	VII	43.580	22 19 5.62	14 2 10.86	14 6276
136	8.8	4.5	6.5	8.7	11.0	13.2	c	21 8.79	53 30 10.0 22.1	III	41.170	22 21 4.15	14 37 22.79	14 6283
137	9.2	20.9	23.2	25.2	27.5	29.5	c	23 25.27	53 8 10.0 23.2	III A	41.530	22 23 20.60	14 18 42.04	14 6288
138	9.1	13.7	15.8	17.9	19.6	21.7	e	23 48.36	53 8 " "	V B	42.750	22 23 43.68	−14 12 41.38	−14 6290

Reduction Elements. Zone 63.

1894.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
September 20.3....	+0.096	−0.090	−0.149	+0.088	−0.058	−0.202
20.5....	−0.080	−0.025	−0.256			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	2 H. Scuti		λ Aquilae		π Sagittarii		γ Capricorni		ι Aquarii		θ Aquarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	53 28 2.00		43 52 1.50		60 0 2.40		55 58 1.25		53 12 1.10		47 8 1.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq....	44.780	5 28.25	47.140	6 13.36	48.350	6 36.85	45.060	5 33.48	47.175	6 14.08	46.620	6 4.0
II Red. to Mer......	.690	1.66	.090	1.75	.355	1.59	44.940	1.64	.150	1.67	.600	1.7
VI Inclination	.570		46.920		.160		.820		46.960		.435	
VII Refraction	.520	1 15.0	.900	53.6	.120	1 36.4	.840	1 22.9	.910	1 15.0	.420	1 0.5

	υ Aquarii	
	° ′ ″	
CIRCLE READING.	60 4 1.95	
	r	′ ″
I Microm. Eq......	45.980	5 51.71
II Red. to Mer......	.995	1.59
VI Inclination	.780	
VII Refraction	.740	1 37.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
2 H. Scuti	18 23 31.99	11	−0.11	−19.91	53 34 46.9	43.3
51 H. Cephei S. P.....	18 51 27.36	5	−4.46	[−19.12]	306 10	....
λ Aquilae...........	19 1 0.12	11	−0.10	−19.97	43 59 10.2	42.7
π Sagittarii	19 3 50.75	11	−0.12	−20.02	60 8 17.2	42.5
γ Capricorni	21 34 36.99	11	−0.12	−20.16	56 4 59.3	42.3
ι Aquarii...........	22 1 6.65	11	−0.11	−20.20	53 19 31.8	43.3
θ Aquarii...........	22 11 38.17	11	−0.10	−20.18	47 15 7.7	43.2
9 H. Draconis S. P ...	22 26 27.31	5	−1.04	[−20.35]	295 12	....
υ Aquarii...........	22 29 17.89	11	−0.12	−20.21	60 11 32.5	43.0

h 18.823.........*dt* .... s −19.967
Hourly rate .... − 0.068

Adopted Equator Point ....38° 56′ 42.″9

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
18 25	29.705	70.2	69.1
19 17	29.725	68.5	68.0
20 20	29.745	66.8	66.3
21 15	29.755	66.3	66.2
22 33	29.785	66.9	65.5

Notes.
1. Cloudy after this.
58. Close double; equal components.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0 52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.110	18 0	......	......	+18.106	+18.238	......	......
53	0.111	18 30	......	......	17.898	18.027	......	......
54	0.113	19 0	+17.419	+17.540	17.662	17.786	+17.911	+18.037
55	0.115	19 30	17.174	17.289	17.403	17.518	17.635	+17.752
56	0.117	20 0	16.913	17.019	17.123	17.230	17.336	......
57	−0.118	20 30	16.642	16.735	16.828	16.923	17.018	......
		21 0	16.366	16.446	16.524	16.606	+16.687	......
		21 30	16.087	16.150	16.215	16.282	......	......
		22 0	15.808	15.857	15.907	15.958	......	......
		22 30	+15.538	+15.571	+15.604	+15.639	......	......

APPARENT RIGHT ASCENSION.	D = Z. D. S. to 1894.0						R				
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′
h m	″	″	″	″	″	″	″	″	″	″	″
18 0	.....	.....	−6.63	−6.98	....	....	72.09	74.75	77.52	80.45	83.50
18 30	.....	.....	4.62	4.96	....	....	72.21	74.87	77.64	80.58	83.64
19 0	−1.72	−2.06	−2.39	2.73	−3.08	−3.41	72.33	74.99	77.77	80.70	83.77
19 30	+0.65	+0.33	+0.01	−0.32	−0.64	−0.98	72.46	75.13	77.91	80.85	83.93
20 0	3.14	2.84	2.53	−2.23	+1.91	....	72.59	75.27	78.05	81.00	84.08
20 30	5.70	5.43	5.15	4.87	4.58	....	72.68	75.35	78.14	81.10	84.18
21 0	8.33	8.08	7.83	7.57	+7.32	....	72.69	75.37	78.16	81.12	84.20
21 30	10.93	10.72	10.50	10.28	....	....	72.74	75.42	78.22	81.17	84.26
22 0	13.47	13.29	13.11	12.92	....	....	72.81	75.49	78.29	81.25	84.33
22 30	+15.93	+15.79	+15.64	+15.49	....	....	72.90	75.58	78.38	81.34	84.43

1894 SEPTEMBER 24. ZONE 64. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.9	50.6	52.6	54.6	56.5	58.7	a	43 24.30	55 50 10.0 25.0	I 44.670	18 43 19.62	−16 59 42.30	−17 5326
2	8.5	19.6	21.5	23.5	25.5	27.7	a	43 53.27	55 50 “ “	I 48.940	18 43 48.59	17 1 3.37	17 5332
3	9.0	1.9	3.9	6.1	8.4	10.4	c	44 6.15	55 50 “ “	III A 41.650	18 44 1.47	17 1 59.44	17 5334
4	8.6	31.1	33.2	35.4	37.5	39.6	c	45 35.37	55 6 10.0 24.9	V 47.370	18 45 30.58	16 16 34.17	16 5048
5	8.5	13.2	15.2	17.4	21.8	23.2	$c_3 d_2$	49 13.14	55 30 10.0 24.6	VI 42.540	18 49 8.38	16 39 2.30	16 5074
6	9.0	49.2	50.9	52.9	55.0	57.1	a	50 22.68	55 30 “ “	III A 41.790	18 50 17.90	16 41 58.25	16 5084
7	8.7	11.1	13.6	15.5	17.3	19.2	e	54 45.53	56 2 10.0 25.4	VII B 43.040	18 54 40.76	17 7 59.53	17 5410
8	8.7	42.5	44.3	46.1	48.3	50.5	(a)	56 16.08	56 2 “ “	IV 49.360	18 56 11.31	17 13 9.42	17 5423
9	9.0	59.2	1.3	3.7	5.6	7.9	c	57 3.55	56 2 “ “	III B 45.870	18 56 58.76	17 8 49.49	17 5431
10	9.1	39.9	41.6	43.7	45.5	47.7	a	59 13.05	53 36 10.0 27.7	I B 44.360	18 59 7.95	−14 42 12.89	−14 5279
11	8.3	46.3	48.2	50.1	52.0	54.2	a	0 19.54	53 36 “ “	I A 42.910	19 0 14.44	−14 48 10.25	−14 5281
12	8.6	29.0	30.6	34.7	36.8	39.2	$b_2 c_3$	3 39.07	54 50 10.0 24.5	I 45.795	19 3 34.08	15 59 52.04	16 5171
13	9.3	54.1	56.2	58.5	0.7	2.8	c	3 58.47	54 50 “ “	V A 46.790	19 3 53.48	16 3 27.27	16 5175
14	8.9	36.0	37.8	39.7	41.7	44.0	a	10 9.46	55 22 10.0 23.8	I B 41.400	19 10 4.47	16 27 14.48	16 5223
15	8.9	1.4	3.0	7.3	9.4	11.5	$b_2 c_3$	10 11.55	55 22 “ “	III B 45.010	19 10 6.56	16 28 24.93	16 5224
16	9.0	28.4	29.7	33.9	36.1	38.3	$b_2 c_3$	10 38.31	55 22 “ “	III (B) 49.790	19 10 33.32	16 29 55.76	16 5231
17	8.8	49.4	51.2	53.6	55.7	57.9	c	10 53.57	55 22 “ “	V A 43.430	19 10 48.59	16 34 21.51	16 5236
18	8.7	26.8	29.1	31.0	32.8	34.8	e	11 1.21	55 22 “ “	VII B 41.170	19 10 56.21	16 27 14.43	16 5238
19	......	36.5	38.9	40.7	42.6	44.6	e	12 10.96	55 22 “ “	....	19 12 5.95	16 32 31	16 5255
20	8.9	55.9	58.1	0.0	1.8	4.0	e	12 30.27	55 22 “ “	VII B 40.780	19 12 25.25	−16 27 6.38	−16 5257
21	8.4	43.9	45.5	47.3	49.5	51.6	a	24 16.86	53 4 10.0 23.3	I 42.810	19 24 11.46	−14 12 41.73	−14 5446
22	8.0	50.6	52.4	54.3	56.2	58.5	a	25 23.78	53 36 10.0 23.0	I A 37.860	19 25 18.43	14 46 21.44	14 5450
23	8.9	32.5	34.4	36.2	38.1	40.3	a	26 5.69	53 36 “ “	I (B) 44.570	19 26 0.33	14 42 3.40	14 5453
24	9.0	28.1	29.7	31.5	33.5	35.7	a	27 1.09	53 36 “ “	I A 45.690	19 26 55.73	14 48 49.79	14 5458
25	8.8	29.6	31.3	33.4	35.3	37.6	a	28 2.80	53 36 “ “	I B 39.710	19 27 57.42	14 40 30.10	14 5462
26	9.1	45.6	47.5	49.5	51.4	53.6	a	29 18.91	53 36 “ “	I A 48.830	19 29 13.53	14 49 48.61	14 5466
27	9.3	39.7	41.5	43.4	45.4	47.5	a	30 13.03	54 42 10.0 24.3	....	19 30 7.76	15 46 44	15 5404
28	9.2	11.9	14.1	16.2	18.4	20.6	c	30 16.25	54 42 “ “	V A 48.310	19 30 10.99	15 55 45.00	16 5367
29	9.0	50.7	53.0	54.9	56.6	58.6	e	31 25.26	53 54 10.0 24.2	VII A 46.820	19 31 19.90	15 7 15.41	15 5407
30	8.9	39.1	41.5	43.3	45.1	47.2	e	32 13.76	53 54 “ “	V B 42.400	19 32 8.38	−14 59 24.29	−15 5410
31	8.7	22.9	25.0	27.0	29.3	31.3	c	33 27.11	53 38 10.0 23.0	V 46.030	19 33 21.69	−14 47 44.01	−14 5489
32	8.7	30.1	32.2	34.3	36.5	38.7	c	34 34.37	54 26 10.0 24.0	V B 38.815	19 34 29.01	15 30 16.40	15 5424
33	8.5	19.6	21.6	23.9	26.0	28.1	c	35 23.85	54 26 “ “	III A 43.390	19 35 18.50	15 38 7.00	15 5431
34	8.5	9.1	10.9	12.8	14.7	17.0	a	36 42.34	54 2 10.0 23.2	III 47.840	19 36 36.93	15 12 16.66	15 5436
35	8.9	10.5	12.7	14.8	16.9	19.0	c	37 14.79	54 30 10.0 24.1	V B 42.120	19 37 9.42	15 35 18.48	15 5438
36	5.8	52.5	54.5	56.7	58.9	1.0	c	37 56.73	54 30 “ “	V A 43.360	19 37 51.36	15 42 7.15	15 5444
37	9.4	43.4	45.4	47.6	49.7	52.0	c	38 47.63	54 10 10.0 23.7	V B 39.160	19 38 42.20	15 14 20.49	15 5448
38	8.7	33.8	35.9	38.2	40.2	42.5	c	39 38.13	54 10 “ “	III A 40.250	19 39 32.71	15 21 4.73	15 5455
39	9.0	36.2	38.1	40.0	42.0	44.2	a	41 9.55	54 10 “ “	I B 49.830	19 41 4.11	15 17 39.34	15 5463
40	9.2	19.6	21.5	23.4	25.4	27.4	a	41 52.90	54 10 “ “	III B 40.330	19 41 47.45	−15 14 40.02	−15 5466
41	8.5	49.7	51.6	53.4	55.4	57.5	a	43 22.96	54 10 “ “	I 47.340	19 43 17.50	−15 20 3.34	−15 5472
42	8.4	15.4	17.2	19.1	21.0	23.3	a	44 48.63	54 2 10.0 23.4	I 44.970	19 44 43.14	15 11 17.20	15 5478
43	9.2	20.3	22.1	23.9	25.9	28.0	a	45 53.58	54 42 10.0 25.1	I 47.170	19 45 48.14	15 52 1.23	15 5483
44	9.0	19.4	21.2	23.3	25.0	27.3	a	46 52.75	54 34 10.0 25.1	I 45.700	19 46 47.29	15 43 32.55	15 5490
45	9.1	35.7	37.7	39.8	41.5	43.8	a	47 9.20	54 34 “ “	I B 45.740	19 47 3.73	15 40 20.92	15 5492
46	9.4	8.4	10.3	12.1	14.1	16.4	a	48 41.75	54 24 10.0 23.8	I 46.630	19 48 36.25	15 33 48.46	15 5501
47	8.1	0.7	2.8	5.0	7.2	9.4	c	49 5.03	55 0 10.0 24.1	III 48.470	19 48 59.60	16 10 26.88	16 5454
48	8.8	48.2	50.1	51.9	53.9	56.1	a	50 21.54	54 30 10.0 24.3	III 47.530	19 50 16.04	15 40 7.30	15 5504
49	7.9	54.7	56.6	59.0	1.1	3.3	c	50 58.95	54 48 10.0 23.5	V 47.590	19 50 53.48	15 58 10.22	16 5458
50	8.4	2.7	4.5	6.5	8.4	10.6	a	52 35.98	54 6 10.0 23.7	III 43.145	19 52 30.41	−15 14 41.67	−15 5518

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
51	9.3	59.6	1.2	3.3	5.3	7.3	a	53 32.78	54 6 10.0 23.7	I 47.780	19 53 27.20	−15 16 7.74	−15 5523
52	9.1	5.3	7.2	9.2	11.1	13.2	a	55 38.60	53 48 10.0 23.1	I 45.500	19 55 32.97	14 57 22.52	15 5531
53	7.8	43.0	44.9	47.1	49.2	51.4	c	55 47.13	53 48 " "	III A 46.950	19 55 41.51	15 1 4.97	15 5534
54	9.0	48.9	50.8	52.7	54.6	56.7	a	57 22.22	54 16 10.0 23.9	I (A) 43.440	19 57 16.62	15 27 57.46	15 5539
55	9.1	46.9	48.8	50.6	52.7	54.8	a	58 20.24	54 16 " "	I A 41.370	19 58 14.63	15 27 17.70	15 5542
56	9.2	17.9	19.9	22.1	24.3	26.5	c	58 22.15	54 16 " "	III B 38.810	19 58 16.53	15 20 5.26	15 5543
57	8.8	36.1	37.9	39.9	42.0	44.1	a	0 9.51	54 32 10.0 24.4	I A 38.770	20 0 3.91	15 42 28.47	15 5554
58	9.1	54.5	56.4	58.3	0.2	2.3	a	1 27.80	54 14 10.0 24.2	I 42.120	20 1 22.15	15 22 17.69	15 5558
59	7.0	23.1	24.9	26.7	28.8	30.9	a	2 56.33	54 10 10.0 24.0	I 44.740	20 2 50.66	15 19 6.74	15 5564
60	8.6	11.6	13.9	16.1	18.2	20.4	c	3 16.05	54 34 10.0 24.7	III 41.710	20 3 10.42	−15 42 12.15	15 5565
61	9.0	11.6	13.6	15.8	17.9	20.1	c	4 15.81	56 14 10.0 25.2	V 47.090	20 4 10.34	−17 24 0.64	−17 5875
62	9.5	11.5	13.1	15.1	17.1	19.5	a	5 44.79	54 38 10.0 24.2	III 45.980	20 5 39.14	15 47 32.47	15 5576
63	9.4	35.0	36.8	38.7	40.6	42.8	a	7 8.26	54 24 10.0 24.5	I B 44.130	20 7 2.56	15 29 42.24	15 5579
64	9.5	9.1	11.2	13.4	15.6	17.6	c	7 13.39	54 24 " "	III 46.760	20 7 7.70	15 33 46.34	15 5580
65	8.1	17.8	18.4	23.7	25.9	28.0	b_2 c_3	10 27.99	55 26 10.0 25.0	III 47.410	20 10 22.37	16 36 0.59	16 5545
66	9.1	44.2	45.6	49.8	52.1	54.1	b_2 c_3	10 54.19	55 26 " "	III A 46.695	20 10 48.57	16 38 59.94	16 5546
67	9.3	38.9	40.5	44.5	46.4	48.9	b_2 c_3	11 48.87	55 26 " "	III (B) 38.710	20 11 43.22	16 30 2.20	16 5548
68	9.0	19.4	21.5	23.8	25.7	28.1	c	12 23.71	55 26 " "	III 41.400	20 12 18.06	16 34 5.52	16 5554
69	9.4	15.6	17.4	19.3	21.3	23.5	a	13 48.88	54 14 10.0 25.1	III 45.515	20 13 43.10	15 23 20.22	15 5616
70	8.1	47.6	49.3	51.4	53.3	55.6	a	14 20.89	54 14 " "	I B 44.630	20 14 15.09	−15 19 49.14	−15 5619
71	9.3	30.6	32.4	34.8	36.9	39.0	c	14 34.75	54 14 " "	V 47.690	20 14 28.96	−15 24 2.98	−15 5621
72	9.6	20.3	22.2	24.1	25.9	28.0	a	15 53.55	54 14 " "	III B 43.480	20 15 47.74	15 19 28.45	15 5632
73	8.0	44.5	46.7	48.7	51.0	53.1	c	16 48.81	55 0 10.0 24.5	III 43.660	20 16 43.07	16 8 45.60	16 5577
74	8.2	5.8	7.6	9.6	11.5	13.8	a	17 39.23	55 0 " "	III B 47.030	20 17 33.48	16 6 37.15	16 5587
75	9.5	25.8	27.5	29.4	31.5	33.7	a	18 59.18	55 10 10.0 24.8	I 47.590	20 18 53.44	16 19 58.44	16 5592
76	8.0	0.2	1.9	3.9	5.9	8.1	a	20 33.45	54 14 10.0 24.2	I B 40.225	20 20 27.58	15 18 22.75	15 5663
77	9.1	13.4	15.3	17.2	19.1	21.5	a	20 46.77	54 14 " "	III A 40.960	20 20 40.90	15 25 3.80	15 5665
78	9.1	9.6	11.5	13.3	15.4	17.5	a	21 42.92	54 14 " "	I 43.420	20 21 37.05	15 22 35.40	15 5672
79	9.4	49.6	51.5	53.3	55.3	57.6	a	22 22.94	54 14 " "	I A 46.350	20 22 17.06	15 26 44.14	15 5675
80	9.2	58.7	0.3	2.4	4.3	6.5	a	23 31.90	54 14 " "	I 46.390	20 23 26.01	−15 23 31.32	−15 5683
81	8.1	40.8	42.6	44.4	46.3	48.6	a	25 14.11	54 58 10.0 25.5	I 42.710	20 25 8.27	−16 6 23.28	−16 5617
82	8.8	3.7	6.0	8.0	9.9	11.8	e	35 38.32	54 22 10.0 24.0	V 42.480	20 35 32.30	15 30 16.65	15 5756
83	8.3	10.3	12.5	14.7	16.9	19.0	c	37 14.69	55 4 10.0 24.6	III A 44.090	20 37 8.72	16 16 0.42	16 5675
84	8.3	45.5	47.4	49.3	51.2	53.4	a	38 18.93	55 4 " "	III B 46.270	20 38 12.94	16 10 16.18	16 5681
85	7.8	10.5	12.4	14.2	16.2	18.5	a	39 43.93	55 4 " "	I B 44.470	20 39 37.93	16 9 39.72	16 5690
86	8.9	41.8	43.8	46.1	48.3	50.5	c	39 46.11	55 4 " "	III B 42.020	20 39 40.11	16 8 54.83	16 5691
87	9.4	1.2	3.1	5.0	7.0	9.1	a	44 34.77	55 42 10.0 24.6	III A 48.110	20 44 28.76	16 55 16.42	17 6102
88	8.0	1.4	3.3	5.1	7.0	9.3	a	45 34.90	55 42 " "	I B 43.230	20 45 28.87	16 47 16.09	16 5711
89	9.4	51.6	53.3	55.5	57.3	59.6	a	46 25.15	55 42 " "	I A 41.990	20 46 19.12	16 53 17.71	17 6110
90	8.9	58.1	0.0	2.0	3.9	6.3	a	47 31.65	55 6 10.0 24.7	I 44.110	20 47 25.56	−16 14 42.88	−16 5719
91	8.0	54.7	56.4	58.2	0.2	2.4	a	49 27.88	54 32 10.0 24.2	I 41.260	20 49 21.72	−15 39 46.29	−15 5833
92	8.9	58.3	0.1	2.0	3.9	6.2	a	50 31.61	54 32 " "	I 45.620	20 50 25.44	15 41 8.96	15 5838
93	9.0	29.6	31.4	33.2	35.3	37.5	a	54 2.83	54 6 10.0 24.3	III B 43.510	20 53 56.57	15 11 16.20	15 5852
94	9.3	36.2	38.3	40.5	42.7	44.8	c	54 40.51	54 6 " "	III A 38.740	20 54 34.25	15 16 10.63	15 5856
95	8.0	38.8	40.3	42.3	44.3	46.4	a	56 11.84	53 58 10.0 23.9	I 42.960	20 56 5.55	15 6 15.07	15 5864
96	9.7	25.5	27.3	29.3	31.2	33.4	a	56 58.87	54 40 10.0 24.0	III 43.570	20 56 52.63	15 48 30.16	15 5867
97	7.8	2.4	4.5	6.6	8.8	10.9	c	57 6.65	54 40 " "	III A 44.290	20 57 0.41	15 51 56.93	16 5769
98	8.8	2.1	4.0	5.9	8.0	10.1	a	59 35.66	55 28 10.0 24.9	I 44.520	20 59 29.46	16 36 48.58	16 5785
99	9.4	38.3	40.2	42.2	44.1	46.3	a	1 11.92	55 44 10.0 25.0	I A 46.150	21 1 5.72	16 56 32.93	17 6178
100	9.2	12.8	14.8	16.7	18.7	21.0	a	1 46.48	55 44 " "	I (B) 43.840	21 1 40.27	−16 49 23.34	−17 6181
101	8.7	54.5	56.5	58.8	1.1	3.1	c	1 58.81	55 44 " "	III 45.220	21 1 52.59	−16 53 3.62	−17 6184
102	9.4	8.8	10.7	12.6	14.6	16.8	a	3 42.34	55 22 10.0 24.4	I A 43.940	21 3 36.09	16 33 48.85	16 5804
103	8.4	21.6	23.4	25.3	27.1	29.5	a	5 55.00	55 22 " "	I B 39.700	21 5 48.70	16 26 2.07	16 5816
104	8.6	40.9	42.6	44.6	46.6	48.9	a	7 14.31	55 6 10.0 24.3	I 47.000	21 7 7.98	16 15 32.14	16 5821
105	8.9	47.7	49.4	51.3	53.4	55.5	a	8 20.98	54 34 10.0 23.8	I 48.400	21 8 14.60	15 43 56.80	15 5923
106	8.8	42.4	44.6	46.5	48.3	50.2	e	9 16.88	54 4 10.0 23.0	VII (43).830	21 9 10.45	15 12 32.72	15 5926
107	9.1	52.8	54.7	56.5	58.5	0.7	a	9 26.08	54 4 " "	III 43.590	21 9 19.65	[15 12 25.04]	15 5928
108	9.0	24.3	26.6	28.4	30.3	32.2	e	9 58.85	54 4 " "	VII B 40.080	21 9 52.41	15 8 8.73	15 5931
109	8.8	6.8	8.8	11.2	13.2	15.5	c	11 11.11	54 4 " "	III A 39.790	21 11 4.66	15 14 25.36	15 5938
110	8.4	31.6	33.5	35.2	37.3	39.5	a	16 4.91	54 26 10.0 23.5	I 44.885	21 15 58.43	−15 34 47.38	−15 5958
111	9.3	58.0	0.0	2.0	3.9	6.0	a	16 31.46	54 26 " "	III B 43.390	21 16 24.97	−15 31 8.32	−15 5959
112	9.5	9.6	11.9	13.9	16.1	18.2	c	19 13.95	53 36 10.0 23.6	V B 38.590	21 19 7.37	14 39 35.74	14 6016
113	8.7	1.3	3.5	5.4	7.3	9.2	e	19 35.88	53 36 " "	V A 43.070	21 19 29.30	[14 47 26.28]	14 6018
114	7.0	27.5	29.7	31.5	33.4	35.4	e	20 2.05	53 36 " "	VII B 47.680	21 19 55.46	14 42 29.95	14 6020
115	9.2	33.0	35.1	37.4	39.4	41.7	c	22 37.33	55 28 10.0 25.2	III A 46.820	21 22 30.85	16 40 41.22	16 5866
116	9	7.2	9.4	11.6	13.8	16.0	c	23 11.61	55 28	....	21 23 5.12	−16 35 8	−16 5868

Reduction Elements. Zone 64.

1894.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
September 24.3....	+0.073	−0.158	−0.260	+0.072	−0.108	−0.274
24.4....	+0.072	−0.059	−0.287			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	5 H. Scuti		λ Aquilae		20 Aquilae		υ Sagittarii		ε Capricorni		γ Capricorni	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	47 12 1.60		43 52 1.60		46 58 1.80		54 58 2.25		58 46 2.25		55 58 2.10	
	r	′ ″		′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	47.970	6 29.46		6 12.04	42.200	4 39.49	48.175	6 34.04	44.565	5 24.27	45.025	5 33.08
II Red. to Mer......	.935	1.72		1.75	.115	1.72	.150	1.65	.495	1.60	44.980	1.64
VI Inclination	.820		46.945	2.04	.020		.040		.350		.800	
VII Refraction.......	.705	1 1.0	.940	54.4	41.970	1 0.5	.030	1 20.6	.310	1 33.9	.770	1 24.3

	ι Aquarii		θ Aquarii		σ Aquarii	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	53 12 1.70		47 8 1.75		50 4 1.90	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	47.130	6 13.10	46.595	6 3.73	41.660	4 29.44
II Red. to Mer......	.060	1.67	.590	1.72	.640	1.70
VI Inclination	46.930		.460		.470	
VII Refraction.......	.870	1 16.3	.375	1 1.5	.420	1 8.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
5 H. Scuti..........	18 38 10.12	11	−0.20	−22.50	47 19 33.8	45.5
51 H. Cephei S. P....	18 51 33.18	6	−4.72	[−22.33]	306 10	....
λ Aquilae...........	19 1 2.74	8	−0.20	−22.55	43 59 11.8	44.4
20 Aquilae...........	19 7 21.17	11	−0.20	−22.55	47 3 43.5	45.0
υ Sagittarii	19 16 5.16	11	−0.22	−22.62	55 5 58.5	43.9
ε Capricorni	21 31 35.31	11	−0.23	−22.69	58 53 2.0	44.1
γ Capricorni	21 34 39.61	11	−0.23	−22.70	56 5 1.1	43.9
ι Aquarii	22 1 9.23	11	−0.22	−22.69	53 19 32.8	44.1
θ Aquarii	22 11 40.84	11	−0.20	−22.76	47 15 8.7	44.2
σ Aquarii	22 25 28.76	11	−0.21	−22.72	50 9 41.2	43.7
9 H. Draconis S. P...	22 26 30.03	5	−1.15	[−22.76]	295 12	....

h 19.012............*dt*...................... s −22.555

Hourly rate .... − 0.0535

Adopted Equator Point ....38° 56′ 44.″31

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
18 40	29.945	66.8	65.5
19 20	29.955	65.2	64.8
20 25	29.975	62.9	62.2
21 25	29.995	61.9	61.4
22 30	29.995	61.1	60.4

Note.

116. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0 53°	54°	55°	56°	57°	*D* = Z. D. S. to 1894.0 53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	−0.219	18 30	+17.812	+17.939	+18.069	+18.199	+18.333	− 4.31	− 4.66	− 5.01	−5.36	−5.73
54	0.221	19 0	17.579	17.701	17.824	17.951	18.076	− 2.10	2.45	2.79	3.14	3.48
55	0.223	19 30	17.324	17.439	17.554	17.671	17.788	+ 0.27	− 0.06	− 0.37	−0.73	−1.07
56	0.226	20 0	17.048	17.153	17.259	17.367	17.476	2.79	+ 2.47	+ 2.15	+1.83	+1.51
57	−0.228	20 30	16.759	16.852	16.947	17.042	+17.137	5.37	5.08	4.78	4.49	+4.19
		21 0	16.460	16.541	16.623	16.702	......	8.02	7.75	7.48	7.21	....
		21 30	+16.156	+16.223	+16.288	+16.354	......	+10.65	+10.41	+10.17	+9.93	....

APPARENT RIGHT ASCENSION.	*R*				
	53°	54°	55°	56°	56° 30′
h m	″	″	″	″	″
18 30	74.58	77.34	80.22	83.27	84.84
19 0	74.68	77.45	80.33	83.39	84.96
19 30	74.82	77.59	80.48	83.54	85.11
20 0	75.01	77.79	80.69	83.75	85.33
20 30	75.18	77.96	80.87	83.95	85.53
21 0	75.27	78.05	80.97	84.04	85.62
21 30	75.37	78.16	81.08	84.16	85.74

1894 OCTOBER 1. ZONE 65. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	......	46.1	48.5	50.4	52.1	54.2	e	57 20.61	54 58 10.0 28.1	V	45.380	18 57 10.52	−16 7 52.65	−16 5124
2	......	15.6	17.6	19.8	24.1	25.6	c_3 d_2	58 15.54	54 58 " "	VI	48.935	18 58 5.44	16 9 0.66	16 5128
3	8.4	59.3	1.0	3.0	4.9	7.1	a	0 32.47	53 52 10.0 27.8	I	42.960	19 0 22.22	15 0 58.85	15 5226
4	8.1	6.6	8.4	10.3	12.2	14.5	a	1 39.96	54 54 10.0 27.7	I	46.980	19 1 29.81	16 4 17.39	16 5157
5	8.5	21.6	23.5	25.5	27.4	29.6	a	2 55.08	54 54 " "	I B	50.350	19 2 44.92	16 2 8.78	16 5165
6	9.0	12.5	14.4	16.3	18.1	20.5	a	3 45.87	54 36 10.0 28.6	I B	45.450	19 3 35.66	15 42 34.83	15 5250
7	9.1	3.3	4.8	6.9	8.9	11.0	a	4 36.51	54 36 " "	I A	46.120	19 4 26.31	15 49 12.68	15 5253
8	9.1	7.7	9.5	11.5	13.4	15.5	a	5 41.03	54 36 " "	I B	45.915	19 5 30.80	15 42 42.86	15 5263
9	8.9	58.8	0.8	2.6	4.5	6.9	a	6 32.27	54 48 10.0 28.0	III	48.190	19 6 22.07	15 58 40.07	16 5195
10	9.4	34.4	36.1	38.0	40.0	42.2	a	8 7.63	54 26 10.0 27.6	I	47.920	19 7 57.37	−15 36 31.30	−15 5278
11	9.5	36.9	38.7	40.9	42.6	44.7	a	9 10.25	54 26 " "	I B	48.580	19 8 59.98	−15 33 31.20	−15 5284
12	8.9	17.7	19.2	23.4	25.7	27.8	b_2 c_3	9 27.78	55 0 10.0 28.1	....		19 9 17.58	16 8 56	16 5215^1
13	9.0	30.2	32.1	36.5	38.1	40.8	c_4 d_3	9 27.98	55 0 " "	VII	42.860	19 9 17.78	16 9 1.02	16 5215^2
14	9.4	15.0	16.7	18.8	20.7	22.9	a	14 48.31	54 24 10.0 28.5	I	43.290	19 14 37.97	15 33 0.75	15 5318
15	9.3	53.1	54.6	58.9	0.9	3.2	b_2 c_3	15 3.14	54 24 " "	III B	41.610	19 14 52.79	15 29 18.20	15 5321
16	5.5	5.9	8.1	10.4	12.5	14.6	c	16 10.31	54 58 10.0 28.7	V	47.950	19 16 0.03	16 8 33.87	16 5283
17	9.2	2.3	4.4	6.6	8.9	11.0	c	17 6.65	54 58 " "	V A	47.015	19 16 56.37	16 11 28.66	16 5288
18	8.0	59.9	2.1	4.2	6.4	8.6	c	18 4.25	54 50 10.0 28.7	III	47.090	19 17 53.94	16 0 14.74	16 5293
19	7.9	49.2	51.1	53.0	55.0	57.1	a	19 22.52	54 4 10.0 28.4	III	44.090	19 19 12.11	[15 13 15.00]	15 5341
20	7.0	6.9	8.6	10.7	12.5	14.8	a	20 40.14	54 4 " "	I	49.940	19 20 29.73	−15 15 4.01	−15 5348
21	9.0	18.5	20.7	22.8	25.1	27.1	c	21 22.85	55 20 10.0 28.6	III	46.900	19 21 12.56	−16 30 11.02	−16 5311
22	9.1	35.8	37.8	40.1	42.1	44.3	c	21 40.03	55 20 " "	V A	44.140	19 21 29.74	16 32 32.96	16 5313
23	9.1	13.6	15.9	17.8	19.6	21.6	e	21 48.01	55 20 " "	VII B	42.770	19 21 37.70	16 25 42.85	16 5316
24	9.0	4.5	7.0	8.9	10.8	12.8	e	22 39.11	55 20 " "	VII B	40.060	19 22 28.80	16 24 50.90	16 5320
25	8.3	20.6	22.2	24.1	26.2	28.5	a	26 53.87	54 48 10.0 28.6	I	46.010	19 26 43.46	15 57 48.59	16 5344
26	9.3	39.9	41.9	44.2	46.3	48.5	c	35 44.17	53 44 10.0 27.7	V B	40.750	19 35 33.54	14 48 52.94	14 5505
27	8.8	20 8	23.1	24.8	26.8	28.9	e	35 55.41	53 44 " "	VII A	41.200	19 35 44.79	14 55 28.08	15 5432
28	9.0	20.1	22.1	23.9	26.0	28.3	a	39 53.57	54 24 10.0 28.2	I	47.640	19 39 42.98	15 34 13.21	15 5458
29	8.9	5.8	7.7	9.5	11.5	13.7	a	40 39.13	54 24 " "	I	48.605	19 40 28.53	15 34 31.29	15 5459
30	9.1	46.6	48.3	50.3	52.2	54.6	a	41 19.89	54 24 " "	I A	42.515	19 41 9.28	−15 35 48.31	−15 5465
31	9.3	42.4	44.1	46.1	48.0	50.2	a	42 15.65	54 24 " "	III	39.140	19 42 5.02	−15 31 32.34	−15 5467
32	9.0	52.2	53.8	58.1	0.1	2 3	b_2 c_3	43 2.32	55 0 10.0 28.5	III B	40.530	19 42 51.75	16 4 47.87	16 5441
33	8.9	25.8	27.4	31.6	33.7	35.9	b_2 c_3	43 35.90	55 0 " "	III A	48.740	19 43 25.34	16 13 49.34	16 5442
34	7.7	5.5	7.2	9.0	11.1	13.4	a	47 38.63	53 42 10.0 27.9	III	45.740	19 47 27.88	14 51 33.99	14 5578
35	9.0	48.2	50.1	52.1	54.0	56.3	a	49 21.90	56 10 10.0 28.5	I	42.890	19 49 11.39	17 18 44.00	17 5791
36	9.3	35.7	38.1	40.3	42.5	44.6	c	49 40.25	55 52 10.0 28.6	III	46.630	19 49 29.71	17 1 56.12	17 5794
37	8.8	46.7	48.8	51.0	53.1	55.3	c	50 50.99	55 30 10.0 29.0	III	41.190	19 50 40.40	16 38 11.34	16 5457
38	8.7	31.9	33.6	35.7	37.6	39.8	a	52 5.23	54 34 10.0 28.2	III	44.760	19 51 54.51	15 43 15.99	15 5513
39	5.0	23.0	25.3	27.4	29.5	31.7	c	52 27.39	54 34 " "	III A	41.380	19 52 16.67	15 45 24.60	15 5516
40	8.9	57.5	59.6	1.7	3.8	6.1	c	53 1.75	54 52 10.0 28.5	V	44.340	19 52 51.06	−16 1 10.18	−16 5471
41	9.9	7.6	9.5	11.4	13.4	15.5	a	55 41.16	55 42 10.0 27.6	I	42.160	19 55 30.53	−16 50 26.01	−16 5481
42	8.0	55.1	57.3	59.4	1.6	3.9	c	55 59.47	55 58 10.0 28.7	V	48.560	19 55 48.87	17 8 32.45	17 5832
43	8.1	59.2	1.2	3.4	5.6	7.6	c	57 3.41	55 0 10.0 27.2	III	44.390	19 56 52.69	16 9 7.70	16 5485
44	7.9	0.4	2.4	4.4	6.6	8.7	c	58 4.51	54 32 10.0 27.6	III	45.890	19 57 53.73	15 41 34.85	15 5541
45	9.1	37.8	39.7	41.5	43.5	45.6	a	59 11.07	54 12 10.0 27.4	III B	41.220	19 59 0.24	15 16 52.31	15 5549
46	9.1	25.7	27.6	29.4	31.4	33.6	a	59 59.00	54 12 " "	I A	38.000	19 59 48.18	15 22 14.43	15 5552
47	8.9	12.4	14.6	16.8	19.1	21.2	c	0 16.83	55 54 10.0 29.2	III	45.450	20 0 6.18	17 3 30.08	17 5857
48	9.2	25.2	26.9	28.8	30.8	32.9	a	1 58.41	54 24 10.0 28.4	I	44.450	20 1 47.56	15 33 4.28	15 5559
49	8.9	51.6	53.9	55.7	57.7	59.6	e	2 26.04	55 2 10.0 29.5	VII	47.380	20 2 15.26	16 12 6.94	16 5505
50	9.2	32.4	34.4	36.7	38.8	41.0	c	3 36.67	55 2 " "	V	50.840	20 3 25.88	−16 13 10.94	−16 5514
51	9.6	53.7	55.8	57.9	0.3	2.5	c	5 58.05	55 0 10.0 28.3	V	46.080	20 5 47.23	−16 9 38.82	−16 5525
52	9.1	45.7	47.4	49.5	51.4	53.6	a	7 19.03	54 34 10.0 28.4	III A	42.590	20 7 8.15	15 45 42.30	15 5581
53	8.5	23.8	25.7	27.6	29.6	31.7	a	7 57.19	54 34 " "	I	45.820	20 7 46.30	−15 43 28.63	−15 5584

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ″ ″		r	h m s	° ′ ″	°
54	8.6	33.7	35.4	37.5	39.3	41.5	a	9 6.98	54 34 10.0 28.4	I B	39.400	20 8 56.07	−15 38 13.79	−15 5592
55	8.7	10.5	12.6	14.7	16.9	19.0	c	9 14.75	54 34 " "	III B	42.780	20 9 3.84	15 39 19.84	15 5593
56	8.6	57.7	59.7	1.8	4.1	6.3	c	10 1.93	55 0 10.0 27.8	V	46.170	20 9 51.06	16 9 38.85	16 5543
57	8.4	45.4	47.3	49.3	51.1	53.3	a	11 18.76	54 20 10.0 27.9	III	45.100	20 11 7.80	[15 29 14.74]	15 5606
58	8.8	2.1	4.5	6.1	8.1	10.1	e	11 36.58	54 40 10.0 28.2	V	47.030	20 11 25.65	15 49 54.02	15 5607
59	9.0	51.6	53.8	56.1	58.1	0.3	c	12 55.99	55 14 10.0 28.0	V	44.400	20 12 45.10	16 23 4.90	16 5557
60	9.0	58.0	59.5	3.9	6.0	8.2	b_2 c_3	14 8.13	54 42 10.0 28.5	III B	42.970	20 13 57.17	−15 47 22.16	−15 5617
61	9.1	40.3	42.5	44.7	46.7	48.9	c	14 44.63	54 42 " "	III A	46.020	20 14 33.68	−15 54 45.39	−16 5565
62	9.1	21.3	23.5	25.6	27.7	29.9	c	15 25.61	54 42 " "	III B	43.410	20 15 14.64	15 47 30.09	15 5627
63	8.0	12.3	13.8	15.8	17.7	20.0	a	16 45.47	54 46 10.0 28.0	I A	39.260	20 16 34.50	15 56 34.26	16 5575
64	9.3	6.0	8.0	10.3	12.4	14.6	c	17 10.27	54 46 " "	III A	42.310	20 16 59.30	15 57 33.88	16 5582
65	9.5	18.4	20.5	22.5	24.8	27.1	c	18 22.67	56 26 10.0 29.3	III	46.820	20 18 11.84	17 35 51.41	17 5961
66	8.6	57.1	59.1	1.3	3.5	5.7	c	19 1.35	56 10 10.0 28.4	V	47.270	20 18 50.49	17 20 0.18	17 5967
67	9.1	46.1	48.3	50.5	52.7	54.8	c	19 50.49	55 32 10.0 28.9	V	45.590	20 19 39.56	16 41 26.45	16 5596
68	9.3	43.8	45.7	47.9	50.0	52.3	c	20 47.95	55 10 10.0 29.0	V	47.500	20 20 36.97	16 20 1.57	16 5601
69	8.5	25.7	27.9	30.0	32.2	34.4	c	21 30.05	55 10 " "	V B	39.290	20 21 19.05	16 14 12.66	16 5604
70	8.0	35.4	37.4	39.6	41.8	44.0	c	22 39.65	53 10 10.0 28.0	V	46.490	20 22 28.46	−14 19 36.15	−14 5753
71	9.3	31.8	34.0	36.2	38.3	40.5	c	23 36.17	55 10 10.0 28.4	V B	50.140	20 23 25.15	−16 17 38.20	−16 5610
72	9.4	35.7	37.8	39.9	42.1	44.2	c	24 39.95	55 24 10.0 28.3	III	47.710	20 24 28.95	16 34 2.91	16 5613
73	9.3	54.6	56.9	59.0	1.2	3.4	c	24 59.03	55 24 " "	V A	45.030	20 24 48.03	16 36 26.41	16 5615
74	9.3	19.4	21.6	23.4	25.2	27.3	e	25 53.87	54 0 10.0 28.1	VII B	49.510	20 25 42.72	15 7 23.67	15 5697
75	9.4	18.9	21.1	23.0	24.9	26.9	e	26 53.39	54 28 10.0 27.7	VII	41.510	20 26 42.27	15 36 4.48	15 5701
76	8.8	55.8	58.1	0.1	4.5	6.0	c_3 d_2	27 55.91	54 28 " "	V B	43.540	20 27 44.77	15 33 28.93	15 5708
77	8.5	57.7	59.7	1.9	3.9	6.1	c	29 1.87	54 4 10.0 27.0	III	45.550	20 28 50.70	15 13 16.25	15 5717
78	6.0	30.2	32.0	34.0	36.1	38.1	a	30 3.77	55 44 10.0 27.7	III	41.810	20 29 52.73	16 52 9.46	17 6027
79	8.9	19.9	21.6	23.4	25.4	27.6	a	30 53.08	54 30 10.0 28.5	III	45.615	20 30 41.91	15 39 18.73	15 5725
80	9.0	21.4	23.3	25.0	27.1	29.4	a	31 54.85	55 14 10.0 28.6	III	43.220	20 31 43.74	−16 22 34.81	−16 5649
81	9.3	57.3	59.0	0.9	2.9	5.1	a	33 30.54	54 30 10.0 28.8	I	42.550	20 33 19.34	−15 38 17.90	−15 5738
82	8.5	4.3	6.4	8.5	10.7	12.9	c	34 8.57	54 10 10.0 27.4	III	46.670	20 33 57.34	15 19 36.39	15 5746
83	9.3	50.4	52.1	54.0	56.0	58.3	a	35 23.61	54 10 " "	I B	46.310	20 35 12.36	15 16 15.09	15 5754
84	9.1	45.0	47.1	49.2	51.6	53.7	c	35 49.33	55 54 10.0 27.8	III	44.310	20 35 38.24	17 2 55.75	17 6058
85	9.4	42.5	44.4	46.3	48.3	50.5	a	37 16.06	55 34 10.0 28.1	I	42.830	20 37 4.92	16 42 24.53	16 5674
86	9.4	51.9	53.8	55.7	57.8	59.9	a	38 25.55	55 58 10.0 28.1	I	45.610	20 38 14.43	17 7 18.18	17 6067
87	9.4	53.6	55.4	57.3	59.3	1.5	a	39 27.08	55 34 10.0 0.0	I	43.750	20 39 15.91	16 42 42.31	16 5686
88	9.3	14.4	16.3	18.2	20.1	22.2	a	40 47.66	53 52 10.0 28.1	I (A)	49.310	20 40 36.33	15 5 35.55	15 5785
89	9.3	12.0	13.7	15.8	17.7	19.7	a	41 45.18	53 52 " "	I B	38.985	20 41 33.82	14 55 53.29	15 5790
90	9.3	42.0	43.9	45.8	47.8	49.9	a	42 15.29	53 52 " "	I A	38.215	20 42 3.94	−15 2 3.94	−15 5793
91	9.2	3.6	5.5	7.4	9.4	11.6	a	43 37.26	56 10 10.0 28.2	I	45.135	20 43 26.08	−17 19 8.19	−17 6095
92	8.2	38.1	40.0	41.9	43.9	45.9	a	45 11.50	54 44 10.0 28.3	I	(44).840	20 45 0.18	15 52 58.21	16 5709
93	9.1	39.4	41.3	43.5	45.8	47.9	c	45 43.57	54 30 10.0 28.6	III	42.185	20 45 32.22	15 38 8.88	15 5814
94	9.0	51.0	52.8	54.7	56.6	59.0	a	47 24.45	55 24 10.0 29.2	I	43.110	20 47 13.17	16 32 26.87	16 5718
95	9.1	6.9	9.2	11.2	13.0	15.0	e	47 41.62	53 28 10.0 27.8	VII A	40.220	20 47 30.18	14 38 43.85	14 5873
96	8.5	53.5	55.6	57.7	59.8	2.0	c	48 57.73	53 28 " "	III B	42.640	20 48 46.26	14 33 1.29	14 5880
97	8.9	3.0	5.2	7.2	9.4	11.7	c	50 7.31	53 50 10.0 28.0	III	47.590	20 49 55.87	14 59 48.47	15 5835
98	8.6	53.8	55.5	57.6	59.4	1.5	a	7 26.95	53 40 10.0 28.2	I	42.760	21 7 15.28	14 48 9.56	14 5960
99	8.6	51.1	52.9	54.8	56.7	58.9	a	8 24.30	53 54 10.0 27.8	I	47.290	21 8 12.64	15 3 35.91	15 5922
100	8.6	38.2	40.0	42.1	44.1	46.1	a	9 11.45	53 22 10.0 27.2	III A	43.450	21 8 59.75	−14 33 35.88	−14 5973
101	8.7	45.6	47.7	49.8	51.9	54.0	c	9 49.81	54 28 10.0 27.4	V B	40.720	21 9 38.17	−15 32 22.78	−15 5929
102	5.0	20.1	22.2	24.5	26.6	28.8	c	10 24.45	54 28 " "	III	39.650	21 10 12.79	15 35 13.01	15 5935
103	9.5	19.8	21.5	23.6	25.6	27.7	a	11 53.25	55 14 10.0 28.4	III	46.995	21 11 41.64	16 23 35.00	16 5831
104	8.9	20.4	21.9	26.2	28.3	30.5	b_2 c_3	12 30.48	55 14 " "	III B	41.230	21 12 18.85	16 18 32.79	16 5833
105	9.5	28.6	30.7	32.9	35.0	37.2	c	13 32.89	54 22 10.0 28.6	III	47.670	21 13 21.19	15 31 45.19	15 5945
106	9.4	23.8	25.9	28.0	30.2	32.4	c	14 28.07	54 42 10.0 29.0	III	42.090	21 14 16.38	15 49 59.81	16 5843
107	8.6	17.3	19.5	21.6	23.9	26.0	c	17 21.67	55 48 10.0 28.6	III	48.130	21 17 10.03	16 57 56.88	17 6247
108	8.8	10.7	13.0	15.0	17.2	19.3	c	18 15.05	54 20 10.0 28.7	V	40.810	21 18 3.29	15 27 35.00	15 5974
109	8.6	55.8	57.9	0.1	2.4	4.5	c	19 0.15	55 20 10.0 28.2	V A	36.560	21 18 48.46	16 29 29.34	16 5856
110	8.9	32.4	34.4	36.6	38.7	40.9	c	19 36.61	55 20 " "	V B	41.545	21 19 24.91	−16 24 38.71	−16 5859
111	8.3	34.9	37.0	38.7	40.8	42.9	a	21 8.37	54 32 10.0 27.8	I	44.435	21 20 56.59	−15 40 39.92	−15 5983
112	9.2	11.1	12.9	15.0	17.0	19.2	a	21 44.73	55 44 10.0 28.3	III	42.060	21 21 33.02	16 51 59.92	17 6272
113	9.5	43.6	45.2	47.2	49.2	51.5	a	23 16.98	55 26 10.0 28.6	I	45.800	21 23 5.24	16 35 8.22	16 5868
114	9.3	33.8	36.0	38.1	40.4	42.5	[illegible]	23 38.17	55 26 " "	III B	43.910	21 23 26.42	16 31 21.67	16 5871
115	8.5	5.7	7.4	9.3	11.0	13.4	a	24 38.85	54 28 10.0 28.0	III	41.150	21 24 27.02	15 35 38.28	15 5995
116	9.4	5.8	7.6	9.6	11.5	13.7	a	25 39.24	55 10 10.0 28.4	I	41.200	21 25 27.45	16 17 39.30	16 5878
117	9.4	33.1	35.0	37.0	39.0	41.2	a	27 6.56	54 34 10.0 28.0	I B	44.160	21 26 54.71	15 39 21.17	15 6004
118	9.3	11.3	13.1	15.0	17.0	19.2	a	27 44.64	54 34 " "	I A	43.515	21 27 32.79	15 45 34.21	15 6006
119	8.9	43.4	45.1	47.1	49.0	51.1	a	29 16.56	53 56 10.0 27.6	I	43.790	21 29 4.65	15 4 24.08	15 6012
120	9.4	23.3	25.1	27.0	29.0	31.3	a	29 56.56	53 56 " "	I B	48.390	21 29 44.64	−15 2 39.23	−15 6014
121	8.7	5.6	7.5	9.2	11.3	13.5	a	31 38.95	54 42 10.0 28.6	I	44.735	21 31 27.05	−15 50 44.19	−16 5895
122	7.9	23.7	25.5	27.4	29.4	31.6	a	32 56.98	54 14 10.0 28.6	I	41.400	21 32 45.03	15 21 39.00	15 6027
123	7.8	26.8	28.5	30.5	32.5	34.7	a	33 59.92	53 12 10.0 28.2	I	44.760	21 33 47.90	14 20 39.92	14 6094
124	9.2	47.4	49.1	51.0	53.0	55.3	a	35 20.55	53 42 10.0 28.1	I	42.760	21 35 8.55	14 50 2.74	15 6033
125	9.1	56.1	57.9	59.8	1.8	4.0	a	36 29.28	53 30 10.0 27.4	I	45.500	21 36 17.26	14 38 53.78	14 6103
126	9.3	53.5	55.2	57.1	59.0	1.3	a	37 26.75	54 38 10.0 27.6	I	46.900	21 37 14.78	−15 47 23.26	−15 6043

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
127	9.3	35.7	37.5	39.4	41.5	43.6	a	38 9.04	54 28 10.0 27.4	III	42.420	21 37 57.05	−15 35 59.09	−15 6048
128	9.0	26.8	28.5	30.6	32.5	34.7	a	39 0.25	55 22 10.0 28.5	III	45.460	21 38 48.30	16 30 59.78	16 5932
129	7.6	57.0	59.1	1.3	3.5	5.5	c	39 1.29	55 22 " "	V B	38.830	21 38 49.34	16 25 42.81	16 5933
130	8.8	26.6	28.5	30.4	32.3	34.5	a	41 0.08	55 22 10.0 28.3	I B	44.020	21 40 48.10	−16 27 17.76	−16 5942
131	3.0	9.6	11.5	13.5	15.5	17.6	a	41 43.18	55 22 " "	I A	47.590	21 41 31.20	−16 34 51.05	−16 5943
132	8.9	1.3	3.0	5.0	7.1	9.3	a	42 34.77	55 22 " "	I A	40.120	21 42 22.77	16 32 28.69	16 5946
133	8.7	33.3	35.2	37.1	38.9	41.3	a	45 6.81	55 30 10.0 28.4	I	47.300	21 44 54.79	16 39 32.04	16 5952
134	8.9	48.8	50.6	52.6	54.6	56.8	a	47 22.27	55 8 10.0 28.6	I	44.150	21 47 10.19	16 16 30.70	16 5963
135	8.9	54.4	56.2	58.3	0.2	2.5	a	48 27.81	54 24 10.0 28.4	I	48.610	21 48 15.69	15 33 53.30	15 6087
136	9.0	55.3	57.0	58.9	0.9	3.1	a	49 28.46	53 56 10.0 28.2	I	41.020	21 49 16.31	15 3 27.34	15 6090
137	9.4	16.1	18.1	20.1	22.4	24.7	c	50 20.29	54 56 10.0 28.7	III B	36.780	21 50 8.16	15 58 58.85	16 5971
138	8.8	53.5	55.8	57.7	59.5	1.7	e	50 27.99	54 56 " "	VII A	45.450	21 50 15.87	16 8 12.11	16 5972
139	8.9	29.7	31.9	34.0	36.2	38.4	c	51 34.05	54 56 " "	III	47.065	21 51 21.91	16 5 26.72	16 5978
140	8.0	23.0	24.5	28.9	31.1	33.1	b_2 c_3	52 33.13	54 28 10.0 28.9	III	42.360	21 52 20.95	−15 35 55.81	−15 6103
141	9.0	47.6	49.1	53.4	55.4	57.6	b_2 c_3	52 57.63	54 28 " "	III B	46.520	21 52 45.45	−15 34 2.61	−15 6104
142	8.9	25.4	26.9	31.1	33.1	35.2	b_2 c_3	53 35.35	54 28 " "	III	43.845	21 53 23.16	15 36 23.88	15 6107
143	9.0	49.0	51.1	53.3	55.5	57.6	c	53 53.31	54 28 " "	V	46.555	21 53 41.12	15 37 17.06	15 6109
144	8.9	29.9	32.2	34.0	35.8	38.0	e	54 4.41	54 28 " "	VII B	45.275	21 53 52.21	15 33 41.63	15 6111
145	9.0	39.4	41.1	43.0	45.0	47.3	a	57 12.82	55 32 10.0 29.0	I	42.865	21 57 0.65	16 40 5.73	16 6003
146	8.9	58.0	59.8	1.8	3.8	6.0	a	58 31.49	55 14 10.0 29.2	I	48.180	21 58 19.28	16 23 45.94	16 6009
147	8.4	42.5	44.3	46.2	48.1	50.3	a	59 15.68	53 48 10.0 28.8	I	42.435	21 59 3.40	14 55 52.42	15 6133
148	8.8	11.2	13.0	15.1	16.9	19.3	a	0 44.72	55 20 10.0 28.8	III	45.750	22 0 32.48	16 29 1.18	16 6019
149	8.6	12.4	14.5	16.6	18.8	21.0	c	1 16.67	53 26 10.0 27.2	V	44.170	22 1 4.34	14 34 26.80	14 6210
150	8.7	5.0	6.9	8.9	10.8	12.9	a	2 38.52	55 20 10.0 27.2	III	46.940	22 2 26.26	−16 29 22.72	−16 6027
151	9.0	2.9	4.7	6.7	8.7	10.9	a	4 36.28	54 26 10.0 27.3	I A	41.425	22 4 23.96	−15 36 46.39	−15 6152
152	8.9	27.2	29.0	31.0	32.8	35.0	a	5 0.48	54 26 " "	III B	38.680	22 4 48.14	15 29 30.36	15 6156
153	8.6	27.7	29.5	31.4	33.2	35.6	a	7 0.85	53 34 10.0 27.4	I	46.500	22 6 48.46	14 43 7.21	14 6228
154	6.5	41.4	43.1	45.2	47.2	49.3	a	7 14.61	53 34 " "	III B	50.350	22 7 2.22	14 41 9.94	14 6229
155	9.0	22.1	23.8	25.9	27.8	30.0	a	8 55.58	55 32 10.0 27.8	I	45.270	22 8 43.26	16 40 48.96	16 6044
156	9.4	14.4	16.5	18.6	20.9	23.0	c	9 18.69	54 56 10.0 27.4	III	43.265	22 9 6.33	16 4 10.68	16 6045
157	9.0	7.5	9.2	11.3	13.3	15.4	a	10 40.58	52 36 10.0 27.6	I	43.640	22 10 28.10	13 44 9.90	13 6145
158	9.6	54.8	56.6	58.3	0.5	2.6	a	14 27.95	53 36 10.0 28.3	I A	47.980	22 14 15.48	14 48 47.98	15 6192
159	9.4	33.7	35.7	37.9	39.9	42.1	c	14 37.87	53 36 " "	V B	41.270	22 14 25.39	14 40 18.09	14 6258
160	8.7	40.5	42.0	46.1	48.3	50.5	b_2 c_3	15 50.48	54 16 10.0 27.8	III	46.940	22 15 38.01	−15 25 18.07	−15 6197
161	9.0	2.1	4.4	6.4	8.8	10.7	c	16 6.49	54 16 " "	V A	47.145	22 15 54.02	−15 28 36.53	−15 6198
162	9.3	53.8	55.9	58.1	0.2	2.5	c	16 58.11	54 16 " "	III B	47.340	22 16 45.62	15 22 13.20	15 6202
163	7.5	37.2	39.0	40.9	43.0	45.3	a	18 10.56	54 16 " "	I A	42.550	22 17 58.07	15 27 5.59	15 6208
164	9.5	50.2	51.8	55.9	58.0	0.1	b_2 c_3	19 0.16	52 44 10.0 28.0	III	40.630	22 18 47.60	13 51 13.71	14 6274
165	8.9	47.5	49.3	51.3	53.1	55.4	a	20 20.89	54 58 10.0 28.4	I	44.160	22 20 8.39	16 6 24.89	16 6081
166	8.7	16.7	18.5	20.5	22.5	24.7	a	20 50.06	54 18 10.0 28.0	III	47.825	22 20 37.52	15 27 34.41	15 6221
167	9.3	41.9	43.6	45.6	47.6	49.8	a	23 15.16	54 14 10.0 27.8	I	41.940	22 23 2.59	15 21 40.00	15 6228
168	9.0	6.0	7.8	9.8	11.6	13.9	a	24 39.28	54 14 " "	I B	45.210	22 24 26.71	15 19 29.82	15 6230
169	9.2	39.7	41.8	43.7	45.7	47.7	a	25 13.17	54 14 " "	I B	39.300	22 25 0.59	15 17 37.26	15 6232
170	9.3	8.3	10.4	12.5	14.8	16.9	c	31 12.59	56 2 10.0 28.6	III	43.410	22 30 59.97	−17 10 14.31	−17 6556
171	9.2	57.9	59.3	3.6	5.6	7.9	b_2 c_3	32 7.86	54 22 10.0 29.0	III	41.460	22 31 55.19	−15 29 32.57	−15 6250
172	9.4	50.4	51.7	56.0	58.2	0.5	b_2 c_3	33 0.37	54 36 10.0 29.6	III	46.650	22 32 47.70	15 45 12.21	15 6252
173	8.1	14.7	16.4	18.4	20.4	22.5	a	34 47.91	53 58 10.0 27.4	I (B)	47.100	22 34 35.20	15 4 3.72	15 6257
174	8.4	40.5	42.5	44.4	46.4	48.5	a	35 13.89	53 58 " "	I	47.840	22 35 1.18	15 7 30.01	15 6258
175	9.1	16.3	18.2	20.0	22.1	24.3	a	35 49.51	53 14 10.0 27.8	I	45.170	22 35 36.77	14 22 37.44	14 6326
176	8.6	57.8	59.7	1.7	3.6	5.7	a	36 31.27	55 0 10.0 28.0	I	44.490	22 36 18.57	16 8 29.22	16 6134
177	8.9	43.0	45.0	47.1	49.3	51.5	c	36 47.19	55 0 " "	III A	40.040	22 36 34.49	16 10 19.39	16 6135
178	8.8	10.1	12.3	14.5	16.6	18.6	c	38 14.43	55 16 10.0 29.7	III	46.730	22 38 1.72	16 25 15.11	16 6140
179	9.4	57.8	59.8	1.7	3.7	5.9	a	39 31.40	55 16 " "	I A	45.410	22 39 18.66	16 28 1.25	16 6146
180	9.2	25.1	27.0	28.9	31.0	33.1	a	40 58.44	53 56 10.0 29.0	I	42.200	22 40 45.66	−15 3 42.81	−15 6272
181	8.8	18.7	20.6	22.5	24.5	26.6	a	41 52.28	55 52 10.0 29.0	I (B)	41.080	22 41 39.53	−16 56 14.52	−17 6591
182	9.0	18.6	20.4	22.3	24.4	26.6	a	42 52.18	55 52 " "	I A	47.890	22 42 39.42	17 4 49.55	17 6593
183	9.4	49.9	51.6	53.6	55.6	57.8	a	44 23.03	53 16 10.0 28.1	I	41.610	22 44 10.19	14 23 29.08	14 6352
184	8.9	54.4	56.3	58.3	0.2	2.5	a	45 27.78	54 8 10.0 27.8	I	42.085	22 45 14.96	15 15 40.16	15 6282
185	9.1	51.4	53.0	57.2	59.4	1.5	b_2 c_3	46 1.51	54 52 10.0 28.2	III	45.350	22 45 48.69	16 0 46.26	16 6161
186	8.9	21.1	23.3	25.5	27.7	30.0	c	49 25.53	54 12 10.0 28.4	III	46.090	22 49 12.64	15 20 58.36	15 6295
187	8.9	22.9	24.6	26.6	28.5	30.7	a	50 56.10	54 4 10.0 28.0	I	42.560	22 50 43.20	15 11 48.70	15 6303
188	9.2	37.1	38.8	40.9	42.9	45.0	a	52 10.40	54 14 10.0 28.6	I	40.405	22 51 57.50	15 21 8.32	15 6306
189	8.8	31.8	33.7	35.8	37.7	39.8	a	53 5.38	55 18 10.0 28.7	I	44.240	22 52 52.48	16 26 24.28	16 6184
190	8.8	57.3	59.1	1.1	3.1	5.3	a	54 30.83	55 30 10.0 29.4	I	44.970	22 54 17.92	−16 38 39.00	−16 6188
191	9.3	1.4	3.2	5.2	7.1	9.3	a	55 34.64	53 50 10.0 29.6	I	45.100	22 55 21.69	−14 58 36.91	−15 6320
192	8.7	32.4	34.4	36.3	38.3	40.4	a	57 5.85	54 26 10.0 29.1	I B	43.180	22 56 52.88	15 30 49.37	15 6330
193	8.9	25.1	27.0	28.9	30.9	33.1	a	57 58.50	54 26 " "	I A	49.820	22 57 45.53	15 39 21.17	15 6335
194	8.8	39.3	41.1	43.0	45.1	47.3	a	59 12.79	55 24 10.0 29.0	I	45.730	22 58 59.81	16 32 52.70	16 6201
195	8.8	47.5	49.3	51.4	53.3	55.4	a	0 20.93	54 50 10.0 29.2	I	43.550	23 0 7.93	15 58 9.63	16 6205
196	8.2	15.6	17.5	19.6	21.3	23.5	a	0 49.05	54 50 " "	I	47.870	23 0 36.04	15 59 31.86	16 6208
197	9.0	4.0	5.7	7.7	9.6	11.8	a	1 37.50	56 2 10.0 0.7	III	45.280	23 1 24.49	17 10 48.54	17 6670
198	9.1	32.5	34.2	36.1	38.0	40.4	a	3 5.93	55 44 10.0 29.0	I	45.920	23 2 52.91	−16 52 57.11	−17 6680

Reduction Elements. Zone 65.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 1.3....	+0.112	−0.216	−0.437	+0.074	−0.176	−0.494
1.4....	+0.037	−0.137	−0.550			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi XVIII. 260		*d* Sagittarii		κ Aquilae		51 Aquilae		θ Aquarii		υ Aquarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 16 4.10		57 58 4.20		46 6 4.20		49 52 3.80		47 8 4.00		60 4 4.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq......	(44).120	5 16.38		5 36.21		5 23.70	44.590	5 24.36	46.560	6 1.73	45.870	5 49.46
II | Red. to Mer......	.100	1.66		1.62	44.490	1.76	.530	1.70	.430	1.72	.830	1.59
VI | Inclination	(43).950		45.065	2.04	.310		.430		.330		.690	
VII | Refraction......	.895	1 17.8	.050	1 29.4		58.2	.390	1 6.5	.280	1 1.1	.630	1 38.3
	λ Aquarii		*c*² Aquarii		ω² Aquarii							
	° ′ ″		° ′ ″		° ′ ″							
CIRCLE READING.	46 58 4.00		60 34 4.50		53 58 4.30							
	r	′ ″	r	′ ″	r	′ ″						
I | Microm. Eq......	46.260	5 56.68	44.950	5 31.49	42.810	4 51.66						
II | Red. to Mer......	.210	1.72	.895	1.58	.790	1.66						
VI | Inclination	.045		.695		.655							
VII | Refraction......	.020	1 0.8	.700	1 40.5	.610	1 18.2						

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi XVIII. 260..	18 56 0.81	11	− 0.44	−27.65	54 22 39.8	42.4
d Sagittarii	19 11 56.97	11	− 0.46	−27.67	58 5 13.5	42.1
λ Ursae Minoris.....	19 28 35.95	4	+19.08	[−30.14]	309 58	....
κ Aquilae..........	19 31 42.05	11	− 0.41	−27.62	46 12 27.9	44.1
51 Aquilae..........	19 45 27.85	11	− 0.42	−27.72	49 58 36.4	42.8
θ Aquarii..........	22 11 46.07	11	− 0.41	−27.82	47 15 8.5	43.9
9 H. Draconis S. P...	22 26 36.44	11	− 1.88	[−28.04]	295 12	....
υ Aquarii..........	22 29 25.90	11	− 0.48	−27.89	60 11 33.3	42.9
λ Aquarii..........	22 47 36.85	11	− 0.41	−27.87	47 5 3.2	44.0
*c*² Aquarii..........	23 4 19.92	10	− 0.48	−27.92	60 41 18.1	42.8
ω² Aquarii..........	23 37 45.55	11	− 0.44	−27.88	54 4 15.8	44.4

h s
19.355...........*dt*.................... −27.665
Hourly rate........... − 0.0606

° ′ ″
Adopted Equator Point..........38 56 43.27

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
18 52	29.785	68.0	66.9
19 55	29.785	65.6	66.2
20 50	29.785	63.2	63.0
22 0	29.785	62.3	61.5
23 5	29.785	60.9	59.4

Notes.

1. Close double, south observed.
79. Close double, mean observed.
94. Suspected close double.

ω² Aquarii, λ Ursae Minoris. Image unsteady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.435	18 30	......	......	......	+18.208	+18.338	......
53	0.440	19 0	......	+17.714	+17.838	17.961	18.088	......
54	0.444	19 30	......	17.454	17.569	17.686	17.803	+17.921
55	0.449	20 0	......	17.170	17.275	17.382	17.490	17.598
56	0.454	20 30	......	16.871	16.964	17.060	17.156	17.251
57	−0.459	21 0	......	16.560	16.639	16.722	16.802	16.885
		21 30	......	16.242	16.307	16.374	16.441	16.507
		22 0	+15.872	15.922	15.972	16.024	16.075	16.125
		22 30	+15.574	15.608	15.642	15.677	15.708	15.744
		23 0	......	+15.302	+15.320	+15.336	+15.352	+15.368

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894.0						*R*				
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′
h m	″	″	″	″	″	″	″	″	″	″	″
18 30	.....	.....	.....	− 5.14	− 5.50	.....	72.66	75.34	78.13	81.08	84.16
19 0	.....	− 2.28	− 2.63	2.97	3.33	.....	72.71	75.39	78.18	81.13	84.22
19 30	.....	+ 0.05	− 0.29	− 0.64	− 0.99	− 1.33	72.76	75.44	78.23	81.19	84.28
20 0	.....	2.51	+ 2.18	+ 1.85	+ 1.51	+ 1.18	72.84	75.53	78.32	81.28	84.37
20 30	.....	5.06	4.74	4.42	4.11	3.79	73.10	75.79	78.60	81.56	84.66
21 0	.....	7.66	7.36	7.07	6.77	6.47	73.30	76.00	78.81	81.79	84.90
21 30	.....	10.25	9.98	9.71	9.45	9.18	73.38	76.09	78.90	81.88	85.00
22 0	+ 13.04	12.81	12.57	12.32	12.09	11.84	73.49	76.19	79.01	82.00	85.11
22 30	+ 15.49	15.29	15.08	14.87	14.67	14.45	73.62	76.33	79.16	82.15	85.27
23 0	.....	+ 17.63	+ 17.46	+ 17.29	+ 17.12	+ 16.95	73.77	76.49	79.32	82.32	85.45

1894 OCTOBER 3. ZONE 66. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.5	37.5	39.1	43.3	45.3	47.6	b_2 c_3	5 47.56	54 18 10.0 4.4	III A	43.220	19 5 35.76	−15 30 9.19	−15 5264
2	8.9	18.3	20.5	22.4	24.4	26.2	e	5 52.82	54 18 " "	VII B	38.850	19 5 41.00	15 22 23.55	15 5265
3	9.0	5.0	6.9	9.3	11.5	13.5	c	7 9.25	56 4 10.0 6.2	V B	42.540	19 6 57.64	17 9 37.24	17 5521
4	8.9	45.0	47.2	49.0	50.8	52.9	e	7 19.18	56 4 " "	VII B	43.060	19 7 7.57	17 9 48.44	17 5522
5	8.9	36.6	38.4	40.3	42.3	44.5	a	9 10.16	56 4 " "	III B	47.940	19 8 58.54	17 11 17.63	17 5534
6	8.8	17.3	19.3	21.6	23.8	25.9	c	9 21.59	56 4 " "	V A	41.335	19 9 9.97	17 15 38.73	17 5537
7	8.1	24.4	26.5	28.7	30.9	33.2	c	11 28.75	56 4 " "	V	45.635	19 11 17.11	17 13 46.71	17 5555
8	9.1	9.9	11.9	13.8	15.6	18.0	a	12 43.58	56 4 " "	I B	46.930	19 12 31.92	17 10 55.13	17 5570
9	8.8	43.5	45.5	47.6	50.0	52.3	c	12 47.79	56 4 " "	III A	41.025	19 12 36.14	17 15 29.87	17 5571
10	8.8	4.2	6.2	8.4	10.6	12.9	c	13 8.47	56 4 " "	V	37.960	19 12 56.81	−17 11 19.92	−17 5574
11	8.7	56.6	58.1	2.3	4.4	6.5	b_2 c_3	14 6.62	56 4 " "	III	38.580	19 13 54.95	−17 11 29.72	−17 5584
12	8.0	23.6	25.5	27.4	29.4	31.5	a	14 57.22	56 4 " "	I A	35.685	19 14 45.54	17 13 45.62	17 5588
13	8.0	40.6	42.4	44.5	46.3	48.7	a	18 14.27	56 14 10.0 5.4	III	44.160	19 18 2.58	17 23 14.24	17 5611
14	8.9	52.8	54.6	56.6	58.5	0.8	a	19 26.51	56 44 10.0 6.8	I	43.460	19 19 14.86	17 53 0.65	17 5618
15	8.9	11.6	13.5	15.6	17.5	19.7	a	19 45.42	56 44 " "	I B	45.150	19 19 33.77	17 50 20.46	17 5620
16	8.6	14.3	16.1	18.1	20.0	22.0	a	20 47.57	54 18 10.0 4.4	I B	44.650	19 20 35.61	15 24 3.14	15 5349
17	8.6	55.0	56.8	58.8	0.7	3.0	a	21 28.34	54 18 " "	I A	41.700	19 21 16.39	15 29 32.06	15 5353
18	9.2	25.6	27.3	31.6	33.6	35.9	b_2 c_3	21 35.80	54 18 " "	III A	43.430	19 21 23.85	15 30 6.45	15 5354
19	8.3	49.0	51.1	53.4	55.7	57.6	c	21 53.37	54 18 " "	V A	45.340	19 21 41.42	15 30 44.35	15 5357
20	9.0	11.1	13.1	15.3	17.6	19.9	c	23 15.41	55 10 10.0 4.6	III	46.810	19 23 3.54	−16 19 59.45	−16 5324
21	9.1	5.3	7.3	9.5	11.7	13.7	c	24 9.51	55 10 " "	III A	40.710	19 23 57.63	−16 21 16.09	−16 5332
22	8.0	41.6	43.4	45.1	47.2	49.5	a	25 14.97	55 10 " "	I A	44.705	19 25 3.08	16 22 29.99	16 5337
23	9.1	27.6	29.4	31.4	33.3	35.6	a	28 1.16	55 52 10.0 5.6	I	47.330	19 27 49.33	17 2 7.91	17 5666
24	9.3	46.4	48.1	50.1	52.0	54.4	a	30 19.72	54 38 10.0 5.3	I	43.130	19 30 7.72	15 46 43.73	15 5404
25	9.3	32.1	34.1	36.3	38.5	40.7	c	33 36.35	56 28 10.0 6.3	V	46.370	19 33 24.53	17 37 52.83	17 5698
26	.....	52.4	54.7	56.6	58.4	0.4	e	34 26.60	56 28 " "	V (A)	47.440	19 34 14.77	17 41 25.85	17 5704
27	5.5	26.4	28.2	30.3	32.2	34.5	a	36 59.92	55 8 10.0 5.6	I (A)	48.150	19 36 47.88	16 21 31.28	16 5413
28	8.9	56.0	57.8	59.6	1.5	3.8	a	37 29.33	55 8 " "	I B	49.340	19 37 17.30	16 15 28.28	16 5420
29	8.8	27.5	29.3	31.2	33.3	35.5	a	38 0.95	55 8 " "	I B	41.190	19 37 48.91	16 12 52.97	16 5423
30	8.9	9.4	11.2	13.1	15.2	17.4	a	39 43.02	56 12 10.0 5.9	I	38.340	19 39 31.10	−17 19 13.21	−17 5737
31	9.1	36.0	37.8	39.8	41.8	44.0	a	41 9.65	56 12 " "	I (A)	47.870	19 40 57.72	−17 25 27.27	−17 5743
32	7.5	2.5	4.3	6.2	8.2	10.6	a	41 36.12	56 12 " "	I B	48.985	19 41 24.17	17 19 22.83	17 5746
33	8.4	34.1	35.9	37.8	39.8	42.1	a	42 7.70	56 12 " "	I B	47.450	19 41 55.75	17 18 53.42	17 5748
34	8.6	30.2	31.9	33.9	35.8	38.1	a	43 3.59	55 16 10.0 4.7	III	42.965	19 42 51.52	16 24 38.73	16 5410
35	9.3	2.5	4.3	6.2	8.2	10.4	a	47 35.77	54 10 10.0 4.8	I	47.330	19 47 23.54	15 19 55.55	15 5494
36	9.1	33.9	36.0	38.3	40.5	42.6	c	47 38.27	54 10 " "	III B	50.870	19 47 26.03	15 17 52.43	15 5495
37	9.4	56.3	58.3	0.3	2.2	4.4	a	50 29.67	53 32 10.0 5.0	I	45.550	19 50 17.34	14 41 19.15	14 5590
38	8.7	44.2	46.0	48.0	49.8	52.1	a	51 17.71	55 44 10.0 5.8	I	43.750	19 51 5.61	16 52 50.45	16 5461
39	9.1	16.9	18.6	20.7	22.6	24.8	a	52 50.34	55 14 10.0 5.0	I A	46.810	19 52 38.18	16 26 59.64	16 5470
40	8.9	9.8	11.6	13.6	15.5	17.7	a	53 43.24	55 14 " "	I B	39.490	19 53 31.04	−16 18 14.54	−16 5473
41	9.4	15.5	17.5	19.5	21.4	23.5	a	55 48.96	54 20 10.0 4.4	I	46.840	19 55 36.65	15 29 43.33	−15 5532
42	8.8	36.5	38.3	40.2	42.4	44.5	a	58 10.09	55 50 10.0 5.3	I A	42.660	19 57 57.92	17 1 40.37	17 5841
43	8.9	52.6	54.5	56.5	58.5	0.7	a	58 26.25	55 50 " "	I B	41.140	19 58 14.07	16 54 45.88	17 5843
44	8.9	35.1	37.2	39.3	43.6	45.2	c_3 d_2	58 35.06	55 34 10.0 5.4	V A	38.490	19 58 22.86	16 44 23.42	16 5489
45	9.2	4.0	6.3	10.5	12.1	14.8	c_4 d_3	59 1.95	55 34 " "	VI A	42.470	19 58 49.74	16 45 39.69	16 5494
46	7.5	48.4	50.4	52.7	54.9	57.0	c	59 52.69	55 34 " "	V B	43.030	19 59 40.46	16 39 24.00	16 5498
47	8.9	23.6	25.5	27.2	29.4	31.6	a	1 57.21	56 6 10.0 5.8	I	44.260	20 1 45.03	17 14 57.17	17 5861
48	9.0	39.4	41.4	43.3	45.2	47.4	a	2 13.10	56 6 " "	III A	40.940	20 2 0.92	17 17 8.83	17 5864
49	8.4	31.8	33.7	35.6	37.7	39.8	a	3 5.27	54 50 10.0 5.5	I	49.380	20 2 52.94	16 0 30.75	16 5509
50	8.5	5.5	7.1	9.1	11.2	13.3	a	5 38.99	56 6 10.0 5.5	III	47.020	20 5 26.77	−17 15 50.06	−17 5884

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
51	9.4	7.5	9.4	11.3	13.3	15.5	a	6 41.15	56 6 10.0 5.5	I B 37.550	20 6 28.90	−17 9 35.35	−17 5891
52	9.4	42.7	44.9	47.2	49.4	51.7	c	6 47.19	56 6 " "	V A 49.590	20 6 34.96	17 19 53.17	17 5893
53	7.9	12.0	13.8	15.8	17.8	20.0	a	7 45.62	56 6 " "	III B 41.220	20 7 33.36	17 10 46.57	17 5901
54	9.3	46.2	48.5	50.5	52.6	54.8	c	7 50.53	56 6 " "	V B 45.180	20 7 38.28	17 12 3.48	17 5903
55	9.2	30.4	32.5	34.5	36.3	38.2	e	8 4.56	56 6 " "	V 47.400	20 7 52.31	17 15 58.03	17 5904
56	7.9	39.6	41.8	43.8	45.9	48.4	c	9 43.91	56 6 " "	III B 36.460	20 9 31.63	17 9 15.27	17 5913
57	8.9	18.8	20.7	22.8	24.7	26.9	a	10 52.51	56 6 " "	I B 39.320	20 10 40.22	17 10 7.52	17 5921
58	8.9	5.5	7.4	9.2	11.3	13.5	a	11 39.14	56 6 " "	I A 41.150	20 11 26.85	17 17 7.55	17 5924
59	9.4	20.7	22.6	24.3	26.5	28.7	■	12 54.41	56 42 10.0 6.1	I 49.200	20 12 42.16	17 52 29.08	18 5644
60	8.8	39.0	41.0	42.8	44.9	47.0	a	14 12.78	56 42 " "	I B 45.430	20 14 0.51	−17 48 4.62	−17 5936
61	8.9	3.5	5.0	7.1	9.2	11.4	a	14 37.08	56 42 " "	I B 47.390	20 14 24.80	−17 48 41.77	−17 5939
62	9.0	20.5	22.3	24.3	26.2	28.5	a	15 54.15	56 22 10.0 6.0	I 46.210	20 15 41.83	17 31 30.11	17 5951
63	8.5	31.9	33.8	35.6	37.6	39.8	a	17 5.42	55 42 10.0 5.0	I 42.750	20 16 53.02	16 50 21.55	16 5581
64	9.3	6.1	7.9	9.9	11.9	14.0	a	18 39.41	54 10 10.0 3.7	I 43.140	20 18 26.83	15 18 23.89	15 5649
65	9.6	12.5	14.6	16.7	18.7	21.0	c	19 16.71	56 44 10.0 5.5	III 47.425	20 19 4.39	17 53 54.72	18 5671
66	9.2	50.9	53.0	55.2	57.5	59.7	c	19 55.27	56 30 10.0 5.7	III (43).785	20 19 42.91	17 38 44.63	17 5972
67	8.0	28.9	30.6	32.6	34.6	36.8	a	21 2.52	56 30 " "	I A 44.720	20 20 50.16	17 42 13.43	17 5975
68	8.9	21.3	23.3	25.2	27.2	29.4	a	22 55.09	56 34 10.0 5.9	I B 44.670	20 22 42.70	17 39 46.67	17 5987
69	8.1	56.1	57.9	59.9	1.9	4.0	a	23 29.79	56 34 " "	I A 43.880	20 23 17.41	17 45 56.90	17 5992
70	9.3	32.3	34.1	36.1	38.2	40.3	a	24 6.03	56 34 " "	I A 38.605	20 23 53.63	−17 44 16.28	−17 5994
71	9.2	22.7	24.5	26.5	28.4	30.6	■	24 56.36	56 34 " "	I 44.540	20 24 43.95	−17 42 55.74	−17 6002
72	9.3	16.3	18.2	20.0	22.0	24.1	a	26 49.73	55 16 10.0 5.0	I A 44.800	20 26 37.18	16 28 9.38	16 5628
73	8.9	5.6	7.5	9.5	11.3	13.6	a	27 39.11	55 16 " "	I B 45.440	20 27 26.55	16 21 55.83	16 5632
74	9.1	11.9	13.6	15.5	17.6	19.7	■	28 45.46	56 28 10.0 5.1	I 43.060	20 28 33.00	17 36 25.65	17 6020
75	9.2	38.0	40.0	41.8	44.0	46.1	a	30 11.78	56 28 " "	I B 46.570	20 29 59.30	17 34 19.73	17 6029
76	8.9	37.7	39.1	43.4	45.5	47.7	b_2 c_3	30 47.73	56 16 10.0 5.6	III B 44.930	20 30 35.22	17 21 49.79	17 6031
77	9.1	20.1	22.1	24.3	26.6	28.9	(c)	31 24.41	56 16 " "	III B 44.090	20 31 11.89	17 21 33.58	17 6034
78	8.0	17.2	19.3	21.4	23.7	25.9	c	32 21.51	56 16 " "	III A 44.920	20 32 8.98	17 28 14.49	17 6039
79	8.9	11.1	13.2	15.4	17.6	19.8	c	33 15.43	56 16 " "	III 44.440	20 33 2.89	17 24 51.98	17 6045
80	9.7	15.2	17.4	19.6	21.8	23.9	c	34 19.59	55 24 10.0 5.9	V A 43.110	20 34 6.96	−16 35 38.76	−16 5661
81	6.5	3.6	5.6	8.0	10.2	12.3	c	35 7.95	55 24 " "	V B 41.860	20 34 55.30	−16 28 49.37	−16 5663
82	9.2	47.1	49.0	51.3	53.6	55.8	c	35 51.37	56 48 10.0 6.4	V 45.360	20 35 38.85	17 57 12.17	18 5746
83	9.1	26.1	28.5	30.3	32.3	34.3	e	36 0.36	56 48 " "	VII A 41.165	20 35 47.84	17 59 6.55	18 5749
84	9.0	12.2	14.4	16.3	18.2	20.3	e	36 46.43	56 18 10.0 5.2	VII 41.990	20 36 33.85	17 26 7.17	17 6060
85	9.6	17.5	19.7	21.5	23.3	25.5	e	37 51.66	56 18 " "	VII B 41.150	20 37 39.06	17 22 38.37	17 6064
86	7.8	38.1	40.3	42.0	44.0	45.8	(e)	39 12.62	53 24 10.0 4.0	VII 44.600	20 38 59.74	14 32 48.11	14 5839
87	9.0	44.9	46.8	49.0	51.2	53.4	c	40 49.07	56 26 10.0 7.0	V A 45.850	20 40 36.46	17 38 32.18	17 6076
88	8.1	34.1.	36.5	38.3	40.3	42.2	e	41 8.41	56 26 " "	V B 44.150	20 40 55.78	17 31 34.34	17 6081
89	9.0	6.8	9.1	11.0	13.0	15.0	e	41 41.10	56 26 " "	V 45.430	20 41 28.47	17 35 10.95	17 6083
90	8.0	45.8	47.9	50.1	52.2	56.5	(c_2d_1)	42 47.94	55 58 10.0 5.7	V 42.750	20 42 35.26	−17 6 17.65	−17 6088
91	9.4	55.5	57.6	59.7	2.0	4.1	c	43 59.79	54 28 10.0 4.0	III 45.170	20 43 46.96	−15 36 57.97	−15 5803
92	9.0	57.6	59.4	1.4	3.4	5.6	a	45 31.29	56 30 10.0 6.6	I 47.700	20 45 18.62	17 39 49.47	17 6104
93	8.8	53.8	55.5	59.6	1.8	4.0	b_2 c_3	46 4.00	56 44 10.0 6.6	III 44.100	20 45 51.35	17 52 43.28	18 5795
94	9.0	56.9	58.7	0.7	2.7	5.0	a	47 30.66	56 44 " "	I A 44.470	20 47 17.99	17 56 1.26	18 5800
95	9.3	17.6	19.4	21.3	23.3	25.5	a	47 51.24	56 32 10.0 6.1	III 46.810	20 47 38.55	17 41 33.49	17 6113
96	9.2	15.4	17.6	19.8	22.0	24.3	c	48 19.83	56 32 " "	III B 42.260	20 48 7.12	17 36 54.43	17 6115
97	9.0	13.6	15.8	17.6	19.9	22.0	c	51 17.79	55 12 10.0 4.7	III (42).270	21 51 4.18	16 19 47.05	16 5974
98	9.2	55.0	57.7	59.5	1.4	3.4	e	51 29.73	55 12 " "	V B 42.420	21 51 16.12	16 16 39.09	16 5976
99	8.6	36.3	38.2	40.0	42.1	44.2	a	54 10.00	56 44 10.0 5.6	I B 37.950	21 53 56.44	17 47 14.86	17 6412
100	8.4	29.7	31.6	33.5	35.5	37.8	a	55 3.47	56 44 " "	I 42.550	21 54 49.90	−17 51 54.53	−18 6052
101	9.3	41.4	43.3	45.1	47.1	49.2	a	56 15.07	56 44 " "	I A 41.040	21 56 1.49	−17 54 38.78	−18 6054

Reduction Elements. Zone 66.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 3.3....	+0.129	−0.255	−0.265	+0.126	−0.234	−0.275
3.4....	+0.123	−0.214	−0.285			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	π Sagittarii		υ Sagittarii		κ Aquilae		51 Aquilae		ν Aquarii		ζ Capricorni	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	60 0 6.70		54 58 7.35		46 6 7.70		49 52 7.55		50 38 7.95		61 42 7.40	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	48.730	6 43.42	48.595	6 40.70	44.865	5 31.08	44.960	5 31.96	44.900	5 30.75	43.780	5 9.27
II Red. to Mer.	.670	1.59	.510	1.65	.870	1.73	.930	1.70	.810	1.69	.720	1.57
VI Inclination	.510		.380		.710		.750		.685		.550	
VII Refraction	.460	1 34.3	.310	1 17.8	.705	56.7	.700	1 4.8	.690	1 6.7	.520	1 41.4

	β Aquarii		γ Capricorni	
	° ′ ″		° ′ ″	
CIRCLE READING.	44 52 7.10		55 58 7.55	
	r	′ ″	r	′ ″
I Microm. Eq.	46.030	5 52.68	45.395	5 40.40
II Red. to Mer.	45.985	1.74	.335	1.64
VI Inclination	.865		.225	
VII Refraction	.815	54.5	.160	1 21.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
π Sagittarii	19 4 0.13	11	— 0.25	—29.48	60 8 26.0	51.0
υ Sagittarii	19 16 11.88	11	— 0.24	—29.49	55 6 7.5	52.8
λ Ursae Minoris	19 28 41.55	4	+10.48	[—29.89]	309 58	....
κ Aquilae	19 31 43.62	11	— 0.24	—29.39	46 12 37.2	53.4
51 Aquilae	19 45 29.36	11	— 0.24	—29.44	49 58 46.0	52.4
ν Aquarii	21 4 22.22	11	— 0.24	—29.53	50 44 47.1	53.2
ζ Capricorni	21 21 10.28	11	— 0.25	29.51	61 48 59.6	53.3
ι H. Draconis S. P.	21 22 33.13	6	— 1.70	[—29.57]	300 44	....
β Aquarii	21 26 31.60	11	— 0.24	—29.44	44 58 56.0	53.7
γ Capricorni	21 34 46.38	11	— 0.24	—29.54	56 5 10.6	52.9
θ Aquarii	22 11 47.62	8	— 0.24	—29.56	47 12	....

h 19.408 .... *dt* .... s —29.450

Hourly rate .... — 0.0311

Adopted Equator Point .... 38° 56′ 52.″84

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 0	29.605	78.3	77.7
20 0	29.605	76.5	75.8
21 5	29.605	76.2	75.3
22 15	29.615	75.5	74.9

Notes.
ν Aquarii, θ Aquarii. Clouds.
υ Sagittarii. Image not good.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					$D=$ Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	—0.241	19 0	....	+17.870	+17.991	+18.117	+18.245	....	—2.58	—2.93	—3.29	—3.65
54	0.242	19 30	+17.484	17.599	17.716	17.833	17.951	+0.09	—0.26	—0.60	—0.96	—1.31
55	0.243	20 0	17.199	17.304	17.412	17.519	17.627	2.54	+2.20	+1.86	+1.52	+1.19
56	0.243	20 30	16.897	16.991	17.086	17.182	17.278	5.06	4.74	4.43	4.11	3.78
57	—0.244	21 0	+16.583	+16.662	16.745	16.826	16.909	+7.65	+7.36	7.05	6.74	6.44
		21 30	....	....	16.394	16.460	16.528	....	....	9.67	9.39	9.11
		22 0	....	....	+16.039	+16.088	+16.140	....	....	+12.28	+12.03	+11.78

APPARENT RIGHT ASCENSION.	R				
	53° 30′	54°	55°	56°	57°
h m	″	″	″	″	″
19 0	73.33	74.68	77.46	80.41	83.48
19 30	73.47	74.82	77.61	80.56	83.64
20 0	73.60	74.95	77.75	80.70	83.79
20 30	73.64	74.99	77.79	80.74	83.83
21 0	73.67	75.02	77.82	80.78	83.87
21 30	73.71	75.06	77.86	80.82	83.91
22 0	73.76	75.11	77.91	80.87	83.97

1894 OCTOBER 6. ZONE 67. CLAMP FAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	
1	9.0	30.7	32.5	34.4	36.4	38.6	a	15 4.28	56 12 10.0 6.8	I B 46.010	19 14 50.40	−17 18 46.16	−17 5589
2	9.1	22.0	24.0	25.9	27.9	30.0	a	15 55.73	56 12 " "	I A 44.190	19 15 41.86	17 24 36.61	17 5597
3	8.0	35.8	37.5	39.6	41.7	43.8	a	16 9.45	56 12 " "	III(A) 48.280	19 15 55.58	17 25 56.09	17 5598
4	8.3	41.5	43.6	45.7	47.8	50.0	c	16 45.73	55 34 10.0 6.0	V A 44.565	19 16 31.77	16 46 44.46	16 5287
5	9.0	20.6	22.5	24.7	26.9	29.2	c	17 24.79	55 34 " "	V B 37.520	19 17 10.80	16 38 4.72	16 5289
6	8.8	34.4	36.5	38.7	40.8	42.9	c	18 38.67	55 20 10.0 6.2	V A 37.250	19 18 24.66	16 30 23.92	16 5296
7	8.8	35.1	36.6	41.0	43.1	45.2	b_2 c_3	19 45.22	54 54 10.0 5.0	III A 43.530	19 19 31.15	16 6 19.69	16 5303
8	9.3	35.8	37.7	39.3	41.4	43.6	a	21 9.12	54 54 " "	III A 41.190	19 20 55.03	[16 5 34.59]	16 5310
9	8.9	11.9	13.8	15.7	17.6	19.7	a	21 45.29	54 54 " "	I B 39.495	19 21 31.19	15 58 34.92	16 5314
10	7.6	35.0	36.8	38.7	40.8	42.9	[illegible]	23 8.29	54 8 10.0 5.1	I 47.630	19 22 54.09	−15 18 19.49	−15 5362
11	7.9	32.9	34.6	36.6	38.5	40.7	a	24 6.15	54 20 10.0 5.5	I A 48.630	19 23 51.97	−15 33 52.04	−15 5366
12	9.0	0.8	2.7	4.7	6.6	9.0	a	24 34.23	54 20 " "	I B 44.100	19 24 20.04	15 26 0.20	15 5367
13	9.0	36.9	39.1	41.1	43.4	45.4	c	24 41.19	54 20 " "	III 49.360	19 24 27.00	15 30 54.32	15 5368
14	8.5	41.5	43.5	45.6	47.9	50.1	c	25 45.73	55 24 10.0 6.2	III A 43.840	19 25 31.66	16 36 25.10	16 5340
15	9.2	27.6	29.6	31.5	33.3	35.6	a	27 1.14	55 24 " "	I B (41).090	19 26 47.05	16 29 5.08	16 5345
16	9.0	4.8	6.9	9.0	11.2	13.5	c	27 9.09	55 24 " "	III B 50.095	19 26 55.00	16 31 58.19	16 5346
17	......	54.7	56.7	58.6	0.5	2.8	a	28 28.28	55 24 " "	III B 42.005	19 28 14.17	16 29 23.66	16 5357
18	8.0	40.7	42.8	45.0	47.1	49.1	c	28 44.95	55 24 " "	III 38.900	19 28 30.84	16 31 36.77	16 5359
19	......	14.9	17.0	19.0	21.0	23.0	e	28 49.26	55 24 " "	V A 40.760	19 28 35.16	16 35 26.75	16 5360
20	9.0	36.8	38.3	42.7	44.7	46.8	b_2 c_3	34 46.84	53 28 10.0 5.1	III 41.930	19 34 32.45	−14 36 26.47	−14 5499
21	9.1	10.1	11.6	15.8	17.9	20.2	b_2 c_3	35 20.10	53 28 " "	III A 44.300	19 35 5.72	−14 40 24.46	−14 5501
22	9.0	9.2	11.4	13.4	15.1	17.2	e	37 43.72	54 16 10.0 5.7	V 42.130	19 37 29.38	15 24 33.05	15 5441
23	8.1	30.6	32.3	34.3	36.1	38.4	a	41 3.96	55 18 10.6 6.6	III 43.970	19 40 49.71	16 27 8.62	16 5433
24	9.2	52.6	54.3	56.2	58.3	0.5	a	42 26.05	55 36 10.0 5.5	I 43.585	19 42 11.82	16 44 58.92	16 5439
25	8.5	33.1	35.2	37.4	39.5	41.6	c	42 37.37	53 40 10.0 5.4	V 43.280	19 42 22.93	14 48 51.36	14 5552
26	8.7	17.0	19.0	21.0	22.8	25.2	a	43 50.39	53 40 " "	III A 38.760	19 43 35.94	14 50 36.32	14 5561
27	8.5	36.6	38.2	40.4	42.3	44.4	a	45 9.71	53 12 10.0 5.1	I 46.520	19 44 55.19	14 21 47.33	14 5567
28	8.6	28.8	30.7	32.6	34.7	36.8	a	46 2.29	54 58 10.0 6.1	I 44.960	19 45 47.94	16 7 22.28	16 5447
29	9.1	7.0	9.0	11.0	12.8	15.0	a	46 40.74	56 20 10.0 6.5	III 45.900	19 46 26.53	17 29 45.73	17 5774
30	9.0	10.7	12.6	14.6	16.6	18.7	a	49 43.99	53 22 10.0 5.2	I 46.740	19 49 29.44	−14 31 50.21	−14 5586
31	9.2	22.2	24.0	26.1	27.9	30.0	a	50 55.35	53 8 10.0 5.5	I 44.700	19 50 40.76	−14 17 10.51	−14 5593
32	9.2	30.1	32.0	33.9	35.8	38.0	a	53 3.27	53 8 " "	I 43.475	19 52 48.66	14 16 46.40	14 5603
33	8.0	11.4	13.0	15.2	17.0	19.3	a	55 44.48	53 4 10.0 5.5	I 44.030	19 55 29.84	14 12 55.80	14 5613
34	9.1	41.5	43.6	45.7	47.9	50.1	c	55 45.77	53 4 " "	III 46.600	19 55 31.13	14 13 46.48	14 5614
35	9.1	48.2	50.0	52.0	54.0	56.1	a	57 21.66	55 8 10.0 6.7	I A 45.100	19 57 7.22	16 20 34.63	16 5487
36	9.1	21.4	23.3	25.1	27.2	29.4	a	58 54.86	55 8 " "	I B 37.650	19 58 40.39	16 11 46.78	16 5490
37	8.9	41.8	43.7	45.5	47.6	49.7	a	59 15.26	55 8 " "	I A 38.340	19 59 0.79	16 18 25.25	16 5495
38	9.1	45.0	46.8	48.7	50.7	53.0	a	0 18.20	53 28 10.0 5.2	I 44.530	20 0 3.54	14 37 4.42	14 5634
39	9.5	30.2	32.5	34.6	36.7	38.8	c	0 34.57	53 6 9.2 4.3	III 43.950	20 0 19.87	14 14 53.34	14 5636
40	9.2	14.1	16.0	18.1	22.4	24.0	c_3 d_2	4 13.95	53 26 10.0 5.0	V 43.080	20 3 59.25	−14 34 38.64	−14 5652
41	8.9	50.1	52.5	54.4	56.1	58.2	e	4 24.83	53 26 " "	VII 41.680	20 4 10.13	−14 34 13.40	−14 5654
42	9.8	23.3	25.4	27.8	29.4	31.6	a	5 56.85	53 26 " "	III 40.480	[20 5 42.13]	[14 33 46.91]	14 5663
43	9.3	4.2	5.8	7.8	9.8	12.0	a	7 37.73	56 28 10.0 6.8	III 46.680	20 7 23.29	17 37 53.36	17 5899
44	8.5	41.7	43.5	45.4	47.5	49.6	a	9 14.90	53 26 10.0 4.8	I A 44.500	20 9 0.15	14 38 13.53	14 5680
45	9.1	30.8	32.6	34.6	36.5	38.7	a	10 3.99	53 26 " "	I 42.240	20 9 49.23	14 34 17.02	14 5684
46	9.2	47.1	48.7	50.8	52.8	55.0	a	10.20.24	53 26 " "	III A 39.595	20 10 5.48	14 36 41.47	14 5690
47	9.0	38.0	40.0	42.2	44.4	46.6	c	10 42.25	53 26 " "	III A 36.000	20 10 27.49	14 35 32.93	14 5693
48	9.0	19.7	21.1	25.4	27.3	29.7	b_2 c_3	11 29.61	53 26 " "	III B 39.680	20 11 14.83	14 30 17.28	14 5697
49	8.3	6.4	8.6	10.6	12.4	14.3	e	13 41.03	53 26 10.0 5.5	VII 48.020	20 13 26.23	14 36 11.00	14 5708
50	9.0	31.7	33.8	35.6	40.1	41.5	c_3 d_2	14 31.57	53 26 " "	VI 45.240	20 14 16.75	−14 35 17.09	−14 5713
51	9.3	32.5	34.6	36.8	41.1	42.6	c_3 d_2	15 32.49	56 14 10.0 6.6	V B 43.815	20 15 17.92	−17 19 44.50	−17 5948
52	9.1	10.3	12.6	14.6	16.4	18.6	e	15 44.66	56 14 " "	VII 42.325	20 15 30.09	17 22 29.89	17 5950
53	7.8	1.3	3.4	5.4	7.6	9.7	c	18 5.49	53 26 10.0 5.3	III 43.400	20 17 50.64	14 34 38.36	14 5732
54	8.0	43.4	45.6	47.7	49.8	51.9	c	18 47.69	52 34 10.0 5.7	III 45.010	20 18 32.75	13 43 6.86	13 5661
55	8.7	52.6	54.6	56.9	59.0	1.2	c	19 56.87	53 58 10.0 5.5	III 49.490	20 19 42.04	15 8 35.07	15 5656
56	9.0	34.1	36.2	38.3	40.5	42.7	c	20 38.37	53 58 " "	V B 38.685	20 20 23.52	15 1 58.43	15 5661
57	8.1	9.4	11.3	13.2	15.2	17.4	a	21 42.72	53 58 " "	I 43.660	20 21 27.88	15 6 41.69	15 5670
58	9.0	35.5	37.3	39.1	41.1	43.4	a	23 8.69	53 58 " "	I B 38.700	20 22 53.82	15 1 54.56	15 5679
59	6.8	15.8	18.0	20.3	22.3	24.6	c	23·20.21	54 56 10.5 6.6	III 42.320	20 23 5.44	16 4 20.78	16 5609
60	9.4	11.6	13.5	15.5	17.5	19.7	a	24 45.33	56 16 10.0 7.5	I (B) 44.740	20 24 30.66	−17 21 56.21	−17 5999
61	8.0	20.7	22.5	24.4	26.4	28.6	a	25 54.30	56 16 " "	I A 45.150	20 25 39.63	−17 28 29.12	−17 6007
62	8.8	16.1	17.9	19.9	22.0	24.1	a	26 49.77	56 16 " "	I B 40.415	20 26 35.07	17 20 33.20	17 6013
63	9.0	26.6	28.4	30.4	32.3	34.5	a	27 59.99	54 50 10.0 6.2	I B 46.490	20 27 45.14	15 56 23.80	16 5634
64	9.1	22.6	24.3	26.2	28.2	30.3	a	28 55.88	54 50 " "	I A 44.520	20 28 41.03	16 2 11.46	16 5635
65	8.0	53.8	55.6	57.5	59.6	1.9	a	29 27.25	55 0 10.0 7.2	III 42.575	20 29 12.41	16 8 23.85	16 5638
66	9.0	9.0	10.9	12.9	14.8	17.0	a	30 42.22	53 2 10.0 5.8	I 42.320	20 30 27.19	14 10 11.04	14 5794
67	9.0	13.3	15.4	17.7	19.8	22.0	c	31 17.65	53 18 10.0 5.5	III 45.410	20 31 2.64	14 27 11.95	14 5797
68	9.2	58.1	59.9	2.0	4.0	6.0	a	32 31.81	56 30 10.5 8.0	I 46.230	20 32 17.07	17 39 35.45	17 6040
69	9.1	49.4	51.2	53.2	55.2	57.5	a	33 22.90	55 6 10.0 6.8	I A 46.070	20 33 8.03	16 18 40.55	16 5655
70	9.2	26.4	28.4	30.8	33.0	35.0	c	33 30.73	55 6 " "	III B 40.875	20 33 15.84	−16 10 37.91	−16 5657

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0.	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
71	8.1	33.1	34.9	37.0	38.9	41.1	a	35 6.52	54 34 10.0 5.6	I 48.090	20 34 51.58	−15 44 3.19	−15 5750
72	9.2	6.2	7.7	12.0	14.2	16.5	b_2 c_3	35 16.33	54 34 “ “	III A 45.390	20 35 1.39	15 46 26.67	15 5752
73	8.9	19.4	21.4	23.7	27.9	29.4	c_3 d_2	35 19.37	54 34 “ “	V A 42.990	20 35 4.43	15 45 42.48	15 5753
74	8.1	43.8	45.7	47.5	49.5	51.8	a	37 17.22	54 52 10.0 5.7	I 47.020	20 37 2.28	16 1 42.98	16 5672
75	9.0	9.3	11.1	13.0	15.0	17.2	a	37 42.67	54 52 “ “	I B 47.950	20 37 27.72	15 58 48.31	16 5676
76	9.4	22.9	24.6	26.6	28.5	30.7	a	38 55.94	52 54 10.0 6.0	I 47.600	20 38 40.81	14 3 48.64	14 5837
77	9.3	27.7	29.4	31.4	33.3	35.6	a	41 1.23	56 6 10.0 7.1	I 43.950	20 40 46.34	17 14 47.51	17 6079
78	9.0	27.4	29.0	31.0	33.1	35.2	a	42 0.74	55 8 10.0 6.7	I 46.980	20 41 45.76	16 17 41.97	16 5694
79	8.8	4.4	6.5	8.6	10.8	12.9	c	43 8.65	54 4 10.0 5.0	V A 45.640	20 42 53.56	15 16 28.85	15 5796
80	9.0	44.9	47.1	49.1	51.4	53.7	c	43 49.25	54 4 “ “	III A 44.780	20 43 34.15	−15 16 10.77	−15 5801
81	8.9	45.2	47.0	49.0	51.1	53.3	a	45 18.55	54 2 10.0 5.6	I 43.050	20 45 3.43	−15 10 22.70	−15 5809
82	9.0	59.5	1.2	3.3	5.2	7.4	a	47 33.09	56 12 10.0 7.5	I A 40.550	20 47 18.13	17 22 54.51	17 6112
83	8.9	45.2	47.0	49.0	51.0	53.2	a	48 18.83	56 12 “ “	I B 38.000	20 48 3.85	17 15 40.27	17 6114
84	8.0	16.4	18.4	20.5	24.7	26.3	c_3 d_2	48 16.29	53 40 10.0 5.5	V 41.390	20 48 1.11	14 47 52.67	14 5875
85	9.3	22.0	23.9	25.9	27.9	30.0	a	49 55.63	55 50 10.0 6.4	I B 45.500	20 49 40.61	16 56 0.93	17 6123
86	9.2	55.1	57.2	59.5	1.6	3.8	c	49 59.45	55 50 “ “	V A 46.880	20 49 44.44	17 2 55.89	17 6125
87	8.5	28.9	31.0	33.3	35.4	37.7	c	51 33.27	56 46 10.0 6.8	III 41.560	20 51 18.31	17 54 2.49	18 5811
88	8.6	25.4	27.2	29.0	31.2	33.4	a	52 59.01	56 12 11.2 8.0	I A 44.550	20 52 43.99	17 24 9.90	17 6137
89	8.2	31.7	33.6	35.6	37.4	39.7	a	54 5.35	56 12 “ “	I B (39).220	20 53 50.30	17 16 2.63	17 6140
90	9.4	33.2	35.2	36.9	38.7	41.2	a	55 6.71	55 40 10.0 7.0	I B 43.950	20 54 51.61	−16 45 29.77	−16 5761
91	8.1	41.7	43.4	45.5	47.5	49.6	a	56 15.22	55 40 “ “	I 46.930	20 56 0.11	−16 49 38.41	−17 6155
92	9.3	53.6	55.6	57.5	59.5	1.7	a	57 27.25	55 40 “ “	I B 46.270	20 57 12.12	16 46 13.25	16 5771
93	9.4	53.6	55.5	57.4	59.3	1.6	a	58 27.28	56 22 10.0 7.6	I A 45.280	20 58 12.19	17 34 21.90	17 6165
94	8.0	56.0	57.7	59.6	1.8	3.9	a	59 29.60	56 22 “ “	I A 43.010	20 59 14.50	17 33 38.41	17 6167
95	9.3	39.8	41.8	43.8	45.8	47.8	a	0 13.57	56 22 “ “	I B 38.340	20 59 58.45	17 25 43.81	17 6170
96	9.3	25.5	27.4	29.4	31.4	33.5	a	0 59.19	56 6 10.3 8.1	I 41.880	21 0 44.04	17 14 2.87	17 6175
97	8.9	37.5	39.8	42.0	46.0	47.9	c_3 d_2	11 37.60	56 30 10.0 6.5	VI 47.850	21 11 22.34	17 39 58.08	17 6224
98	7.7	51.0	53.0	55.3	57.5	59.7	c	12 55.31	56 46 10.0 7.6	III B 48.400	21 12 40.05	17 52 54.86	18 5904
99	9.1	8.9	10.9	13.2	15.3	17.7	c	13 13.21	56 46 “ “	V 51.600	21 12 57.95	17 57 9.66	18 5905
100	9.0	13.8	15.9	18.0	20.3	22.4	c	14 18.09	56 4 10.0 7.3	V B 51.610	21 14 2.76	−17 11 54.96	−17 6237
101	9.1	59.8	2.0	4.1	8.2	9.9	c_3 d_2	14 59.76	56 18 10.0 7.3	V 41.650	21 14 44.44	−17 25 58.26	−17 6239
102	7.9	59.1	0.8	2.8	4.8	7.0	a	16 32.56	55 32 10.0 6.6	I 47.250	21 16 17.18	16 41 38.45	16 5850
103	5.0	51.7	54.0	56.1	58.2	0.5	c	16 56.11	56 6 10.0 6.8	V 46.925	21 16 40.76	17 15 37.34	17 6245
104	9.4	39.1	41.1	43.3	47.5	49.1	c_3 d_2	17 39.03	54 36 10.0 5.2	VI 43.345	21 17 23.57	15 44 24.77	15 5967
105	9.3	18.8	20.6	22.6	24.6	26.9	a	18 52.22	54 36 “ “	I 43.700	21 18 36.74	15 44 27.05	15 5977
106	8.2	22.1	24.2	26.5	28.7	30.8	c	21 26.47	56 34 9.3 6.7	III 42.260	21 21 11.09	17 42 6.78	17 6270
107	8.8	59.1	1.3	3.3	5.5	7.8	c	23 3.41	56 34 “ “	III 40.480	21 22 48.01	17 41 32.51	17 6288
108	9.1	16.4	18.1	20.2	22.2	24.4	a	24 49.99	56 0 10.0 7.5	I 44.750	21 24 34.52	17 8 50.61	17 6297
109	9.0	0.0	1.5	5.8	7.9	10.2	b_2 c_3	25 10.14	56 30 10.0 7.1	III B 45.320	21 24 54.70	17 35 52.17	17 6299
110	8.8	46.9	48.5	52.8	55.0	57.3	b_2 c_3	25 57.16	56 30 “ “	III A 44.240	21 25 41.71	−17 41 56.85	−17 6302
111	8.8	36.2	38.1	40.0	42.0	44.3	a	27 9.69	55 0 10.0 7.4	I 45.650	21 26 54.13	−16 9 4.33	−16 5881
112	9.4	40.0	41.9	44.0	45.9	48.2	a	28 13.62	55 20 10.0 6.4	I 46.740	21 27 58.07	16 29 25.26	16 5884
113	9.0	37.3	39.3	41.3	43.3	45.4	a	29 11.06	56 2 10.0 7.0	I 46.620	21 28 55.54	17 11 25.03	17 6312
114	9.1	14.0	15.6	19.8	22.0	24.1	b_2 c_2	29 24.14	56 2 “ “	III 45.340	21 29 8.61	17 11 2.46	17 6313
115	9.0	27.4	29.8	32.0	34.0	36.3	c	29 31.91	56 2 “ “	V 43.705	21 29 16.38	17 10 32.95	17 6315
116	9.0	36.9	38.7	40.6	42.5	44.9	a	31 10.45	56 2 “ “	I 40.410	21 30 54.90	17 9 26.38	17 6321
117	9.0	40.7	42.5	44.5	46.5	48.7	a	32 14.25	55 36 10.0 6.5	I 45.930	21 31 58.67	16 45 9.74	16 5899
118	8.9	59.7	1.6	3.5	5.4	7.6	a	32 33.22	55 36 “ “	I B 46.310	21 32 17.63	16 42 4.64	16 5901
119	9.0	46.4	48.3	50.3	52.1	54.5	a	33 19.88	54 50 10.0 6.4	I A 47.710	21 33 4.24	16 2 54.37	16 5903
120	......	13.1	14.8	16.8	18.7	21.0	a	33 46.42	54 50 “ “	III B 39.690	21 33 30.76	−15 53 57.92	−16 5905
121	9.4	40.1	41.8	43.7	45.7	48.0	a	35 13.40	54 50 “ “	I B 42.680	21 34 57.73	−15 54 52.78	−16 5913
122	7.9	42.3	44.0	46.1	48.1	50.2	a	36 15.59	54 10 9.7 4.3	I 41.900	21 35 59.87	15 17 46.93	15 6037
123	9.4	28.3	30.1	32.2	34.1	36.3	a	37 1.96	56 10 10.0 6.8	III 46.890	21 36 46.35	17 19 30.58	17 6353
124	8.1	42.7	44.4	46.5	48.4	50.6	a	38 16.37	56 42 10.0 7.5	I 44.090	21 38 0.78	17 50 37.09	18 5998
125	8.9	54.2	56.0	58.0	0.0	2.2	a	39 27.78	55 50 10.0 6.0	I 45.790	21 39 12.10	16 59 5.91	17 6363
126	9.1	47.2	49.2	51.4	53.6	55.8	c	39 51.45	54 54 10.0 5.8	III 47.130	21 39 35.72	16 3 30.42	16 5938
127	8.8	31.7	33.8	35.8	38.1	40.3	c	40 35.95	54 30 10.0 6.0	V B 44.820	21 40 20.18	15 35 34.56	15 6058
128	9.1	59.0	1.2	5.4	7.0	9.7	c_4 d_3	40 56.92	54 30 “ “	VI A 45.440	21 40 41.16	15 42 12.34	15 6060
129	8.0	11.1	12.6	16.8	18.8	21.0	(b_2c_3)	42 21.12	56 36 10.0 6.5	III 46.730	21 42 5.45	17 45 27.53	17 6373
130	9.0	49.9	52.0	53.7	55.9	57.9	a	43 23.40	54 32 10.0 6.0	III (A) 43.960	21 43 7.61	−15 43 41.52	−15 6072
131	8.6	27.4	29.3	31.3	33.2	35.4	a	44 0.81	54 32 “ “	I B 37.330	21 43 45.00	−15 35 8.03	−15 6075
132	9.3	23.5	25.2	27.3	29.2	31.4	a	44 57.16	56 38 10.0 7.1	I 44.385	21 44 41.46	17 46 40.93	17 6388
133	9.0	41.6	43.3	45.3	47.3	49.5	a	47 15.14	56 2 10.0 7.1	I A 41.200	21 46 59.38	17 12 51.30	17 6395
134	8.9	54.0	55.8	57.8	59.7	1.9	a	48 27.58	56 2 “ “	I A 42.550	21 48 11.80	17 13 16.78	17 6398[1]
135	9.5	14.7	16.7	18.7	20.6	22.8	a	48 48.42	56 2 “ “	III B 40.600	21 48 32.64	17 6 15.87	17 6402
136	9.4	51.2	53.3	55.5	57.7	59.8	c	48 55.51	56 2 “ “	III B 42.620	21 48 39.72	17 6 54.29	17 6403
137	9.3	46.6	48.5	50.5	52.4	54.5	a	51 20.10	55 12 10.0 7.0	I 41.720	21 51 4.25	16 19 44.76	16 5974
138	9.5	27.8	29.8	32.1	34.0	36.3	c	51 32.01	55 12 “ “	III B 41.910	21 51 16.15	16 16 37.83	16 5976
139	9.0	4.7	6.7	9.1	11.2	13.5	c	52 9.05	55 34 10.0 6.6	V 44.580	21 51 53.21	16 42 43.44	16 5982
140	8.8	27.6	29.6	31.6	33.6	35.8	a	54 1.04	53 50 10.0 6.2	I 46.720	21 53 45.08	−14 59 15.32	−15 6110
141	9.4	53.8	55.7	57.6	59.5	1.8	a	54 27.36	55 40 10.0 6.4	III 43.055	21 54 11.49	−16 48 12.44	−17 6414
142	9.3	27.6	29.4	31.3	33.5	35.6	a	55 1.17	55 40 “ “	III A 46.065	21 54 45.29	16 52 22.73	17 6416
143	9.3	59.3	1.2	3.0	5.1	7.3	a	56 33.04	56 44 9.3 6.7	I (A) 45.270	21 56 17.19	−17 56 8.57	−18 6055

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
144	9.0	10.9	12.6	14.6	16.6	18.8	a	57 44.56	56 44	9.3	6.7	I A	40.520	21 57 28.69	−17 54 37.93	−18 6059
145	9.4	55.0	57.0	59.0	0.8	3.0	a	58 28.79	56 44	"	"	I B	35.030	21 58 12.91	17 46 27.80	17 6429
146	9.3	46.4	47.9	52.1	54.3	56.4	$b_2 c_3$	2 56.46	55 58	9.2	5.2	III A	47.150	22 2 40.49	17 10 41.87	17 6449
147	8.7	10.9	13.1	15.2	17.4	19.5	c	3 15.23	55 58	"	"	V B	39.650	22 2 59.26	17 1 55.15	17 6451
148	9.1	46.6	48.8	50.6	52.7	54.8	e	3 20.90	55 58	"	"	VII	42.440	22 3 4.92	17 6 2.07	17 6454
149	9.3	36.7	38.5	40.6	42.5	44.6	a	5 10.17	55 8	10.0	6.3	III	43.500	22 4 54.14	14 16 17.46	16 6033
150	9.3	38.1	39.6	44.0	46.1	48.4	$b_2 c_3$	5 48.27	55 34	10.0	5.6	III	42.280	22 5 32.25	−16 41 55.01	−16 6037
151	9.3	53.0	54.9	56.7	58.6	0.9	a	7 26.35	54 40	10.0	6.1	III	42.710	22 7 10.26	−15 48 0.66	−16 6040
152	9.4	40.2	42.0	43.9	45.9	48.0	a	8 13.83	56 34	10.0	7.0	III	47.175	22 7 57.81	17 43 31.46	17 6464
153	9.4	14.6	16.3	18.4	20.4	22.6	a	9 48.27	56 34	"	"	I B	41.410	22 9 32.22	17 38 27.37	17 6469
154	9.0	32.7	34.5	36.3	38.4	40.5	a	11 6.30	56 34	"	"	I	43.070	22 10 50.24	17 42 11.03	17 6478
155	9.2	18.7	20.9	23.0	25.2	27.5	c	13 23.07	55 2	10.0	6.3	V	40.950	22 13 6.92	16 9 29.00	16 6060
156	8.5	20.7	23.0	25.2	27.3	29.5	c	14 25.15	56 0	10.0	6.8	III A	45.590	22 14 9.03	17 12 11.67	17 6491
157	9.4	15.0	17.2	19.5	21.5	23.6	c	15 19.37	56 0	"	"	III B	42.820	22 15 3.24	17 4 53.38	17 6496
158	9.2	50.1	51.9	53.9	55.8	57.9	a	17 23.53	55 16	10.0	6.5	I B	44.165	22 17 7.34	16 21 14.64	16 6070
159	9.2	52.5	54.3	56.2	58.1	0.4	a	18 25.92	55 16	"	"	I A	46.055	22 18 9.72	16 28 15.96	16 6075
160	9.3	44.7	46.9	49.3	51.3	53.5	c	18 49.15	56 38	10.0	6.3	III	41.580	22 18 32.99	−17 45 43.26	−17 6511
161	9.3	39.9	42.0	44.2	46.4	48.5	c	19 44.21	56 26	10.0	7.2	III	46.220	22 19 28.03	−17 35 11.29	−17 6515
162	9.2	34.4	36.4	38.3	40.2	42.4	a	21 8.19	56 42	10.0	7.5	I	46.030	22 20 52.00	17 51 6.53	18 6120
163	8.0	21.6	23.6	25.6	27.5	29.8	a	21 55.45	56 42	"	"	I B	40.570	22 21 39.24	17 46 10.34	17 6526
164	8.8	7.7	9.6	11.4	13.5	15.8	a	22 41.44	56 42	"	"	I B	42.660	22 22 25.22	17 46 50.00	18 6129
165	9.0	1.4	3.3	5.3	7.1	9.5	a	23 34.98	55 34	10.0	6.9	I	41.465	22 23 18.72	16 41 35.74	16 6090
166	8.9	42.3	44.5	46.6	48.8	51.0	c	23 46.65	55 34	"	"	III B	45.700	22 23 30.39	16 39 45.85	16 6092
167	8.8	41.5	43.0	47.1	49.2	51.5	$b_2 c_3$	24 51.50	55 48	10.0	6.5	III A	41.000	22 24 35.22	16 58 42.14	17 6536
168	8.1	15.1	17.3	19.5	21.6	23.8	c	25 19.47	55 48	"	"	V B	38.780	22 25 3.19	16 51 35.96	17 6537
169	9.0	48.6	50.6	52.5	54.5	56.8	a	29 22.10	54 30	10.0	6.7	I	43.140	22 29 5.73	15 38 3.79	15 6243
170	9.1	25.9	28.2	30.2	32.4	34.5	c	29 30.25	54 30	"	"	III	46.210	22 29 13.88	−15 39 4.05	−15 6245
171	7.8	27.0	28.9	30.8	32.8	35.0	a	31 0.59	55 48	10.0	6.7	I B	47.520	22 30 44.24	−16 54 18.43	−17 6554
172	9.4	46.1	47.9	49.9	51.8	54.0	a	31 19.64	55 48	"	"	III	45.870	22 31 3.28	16 57 1.07	17 6557
173	9.0	52.5	54.3	56.4	58.3	0.6	a	32 26.11	55 48	"	"	I B	44.600	22 32 9.75	16 53 22.67	17 6564
174	9.0	51.0	52.8	54.8	56.7	58.9	a	33 24.54	55 48	"	"	I A	43.695	22 33 8.16	16 59 30.85	17 6566
175	9.1	29.9	31.8	33.6	35.7	37.7	a	35 3.36	55 20	10.0	6.8	I	45.190	22 34 46.95	16 28 44.59	16 6125
176	8.0	59.6	1.6	3.5	5.6	7.8	a	35 33.38	56 10	10.0	7.0	III	41.170	22 35 16.97	17 17 32.39	17 6571
177	9.2	9.0	10.9	12.9	14.9	17.2	a	37 42.84	56 46	10.0	7.5	I	45.560	22 37 26.42	17 54 55.97	18 6174
178	8.7	53.8	55.9	57.9	59.8	2.0	a	38 27.53	55 32	10.0	6.9	I	41.590	22 38 11.08	16 39 36.34	16 6142
179	9.4	35.0	36.9	39.0	41.1	43.3	a	40 8.74	55 40	10.0	7.0	I	46.045	22 39 52.27	16 49 1.42	17 6583
180	9.6	11.8	13.9	16.0	18.3	20.5	c	40 16.11	55 40	"	"	V B	43.110	22 39 59.64	−16 44 56.59	−16 6148
181	......	17.2	19.9	21.5	25.9	28.0	$b_1 c_2$	41 30.12	56 26	9.5	6.5	II	43.425	22 41 13.64	−17 34 14.15	−17 6590
182	9.3	57.8	59.7	1.5	3.5	5.8	a	42 31.46	56 26	"	"	I	46.750	22 42 14.97	17 35 16.39	17 6592
183	8.1	16.1	17.9	20.0	22.0	24.0	a	43 49.79	56 26	"	"	I B	44.720	22 43 33.28	17 31 25.36	17 6598
184	9.0	29.1	30.9	32.7	34.7	37.0	a	45 2.57	55 42	10.0	7.0	I	44.530	22 44 46.04	16 50 32.22	17 6603
185	9.3	19.4	21.5	23.6	25.7	27.9	c	49 23.63	54 50	10.0	6.2	V B	43.470	22 49 7.01	15 54 59.86	16 6172
186	9.1	9.5	11.0	12.9	14.9	17.0	a	50 42.62	54 50	"	"	III A	46.650	22 50 25.99	16 2 24.15	16 6177
187	9.2	55.6	57.8	0.0	2.3	4.3	c	51 0.01	54 50	"	"	V A	40.130	22 50 43.38	16 0 21.55	16 6178
188	9.0	47.4	49.6	51.8	53.9	56.2	c	51 51.79	55 40	10.0	6.3	V	43.550	22 51 35.17	16 48 16.04	17 6625
189	9.0	27.5	29.7	32.0	34.0	36.3	c	52 31.91	56 0	10.0	6.6	V B	40.320	22 52 15.28	17 4 3.27	17 6630
190	9.3	13.4	15.2	17.2	19.2	21.4	a	53 47.02	56 0	"	"	III A	46.060	22 53 30.37	−17 12 16.33	−17 6635
191	8.7	45.1	47.0	49.2	51.4	53.6	c	53 49.27	56 0	"	"	V B	42.730	22 53 32.62	−17 4 49.05	−17 6636
192	8.3	34.8	36.3	40.6	42.8	45.0	$b_2 c_3$	54 44.94	55 48	9.5	5.5	III	41.990	22 54 28.28	16 55 44.27	17 6640
193	8.0	45.8	47.7	50.0	52.0	54.4	c	55 49.99	56 18	10.0	8.0	V	39.540	22 55 33.32	17 25 2.20	17 6646
194	9.3	49.8	52.0	54.1	56.4	58.5	c	56 54.17	55 56	10.0	7.0	V	44.695	22 56 37.48	17 4 38.65	17 6648
195	9.2	44.6	46.2	50.6	52.8	55.0	$b_2 c_3$	57 54.90	56 42	10.0	7.3	III	47.355	22 57 38.21	17 51 30.09	18 6243
196	9.3	56.6	58.3	0.3	2.3	4.5	a	59 29.93	54 40	10.0	6.1	I	40.640	22 59 13.20	15 47 13.73	16 6202
197	7.0	38.3	40.2	42.1	44.2	46.3	a	0 12.04	56 28	10.0	7.2	I	46.115	22 59 55.32	17 37 3.75	17 6661
198	8.9	28.4	30.5	32.7	34.8	37.0	c	0 32.69	54 28	9.5	5.4	V	43.240	23 0 15.94	15 36 5.44	15 6341
199	9.1	28.6	30.1	34.5	36.5	38.7	$b_2 c_3$	1 38.68	54 20	10.0	5.8	III B	41.590	23 1 21.92	15 24 20.13	15 6346
200	9.1	44.3	46.5	48.6	52.9	54.4	$c_3 d_2$	1 44.35	54 20	"	"	VI (A)	40.810	23 1 27.59	−15 30 32.87	−15 6348
201	9.0	5.6	7.3	11.5	13.7	16.0	$b_2 c_3$	3 15.88	56 28	9.8	6.5	III	42.230	23 2 59.12	−17 35 51.02	−17 6681

Reduction Elements. Zone 67.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 6.3....	+0.101	+0.004	−0.375	+0.066	−0.016	−0.398
6.4....	+0.032	−0.036	−0.422			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	d Sagittarii		*κ* Aquilae		Lalande 38458		*α*² Capricorni		*ι* Aquarii		*θ* Aquarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	57 58 16.75		46 6 7.50		45 54 8.05		51 42 7.95		53 12 7.50		47 8 7.90	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.765	5 28.98		5 23.56	45.290	5 38.60		5 43.44	46.980	6 10.27	46.490	6 0.79
II Red. to Mer.	.775	1.62	44.490	1.74	.260	1.73		1.68	.940	1.67	.410	1.72
VI Inclination	.595		.360	0.82	.105		45.455	2.04	.775		.245	
VII Refraction	.575	1 31.6	.330	59.7	.080	59.4	.420	1 12.9	.700	1 17.3	.260	1 2.4
	λ Aquarii		*c*² Aquarii									
	° ′ ″		° ′ ″									
CIRCLE READING.	46 58 8.05		60 34 8.15									
	r	′ ″	r	′ ″								
I Microm. Eq.	46.180	5 55.60		5 29.02								
II Red. to Mer.	.160	1.72		1.58								
VI Inclination	.030		44.660	2.04								
VII Refraction	45.940	1 2.1	.700	1 42.6								

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
d Sagittarii	19 12 0.63	11	− 0.30	−31.59	58 5 19.0	47.4
λ Ursae Minoris	19 28 30.05	4	+20.27	[−32.66]	309 58	....
κ Aquilae	19 31 45.85	11	− 0.23	−31.67	46 12 33.3	49.4
Lalande 38458	20 3 1.73	11	− 0.23	−31.66	46 0 47.8	49.5
*α*² Capricorni	20 12 45.37	11	− 0.26	−31.74	51 49 8.0	48.4
ι Aquarii	22 1 18.26	11	− 0.27	−31.76	53 19 36.7	47.5
θ Aquarii	22 11 49.77	11	− 0.24	−31.73	47 15 12.8	48.1
9 H. Draconis S. P.	22 26 40.48	8	− 1.76	[−31.87]	295 12	....
λ Aquarii	22 47 40.59	11	− 0.24	−31.80	47 5 7.5	48.2
*c*² Aquarii	23 4 23.66	11	− 0.31	−31.84	60 41 23.4	47.6

h 19.748 .... *dt* .... s −31.665

Hourly rate .... − 0.0423

Adopted Equator Point .... 38° 56′ 48.26″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 8	29.975	59.3	57.9
20 17	29.975	56.6	56.2
21 5	29.985	56.1	55.3
22 6	30.005	54.9	54.3
23 6	30.015	53.5	53.0

Notes.

17. Close double, mean observed. Magnitudes 8.8, 8.8.
19. Orange.
42. Very difficult.
164. Faint companion following; same declination.
178. Close double.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.264	19 0	......	......	+17.904	+18.028	+18.154	+18.279
53	0.270	19 30	......	+17.518	17.634	17.749	17.867	17.986
54	0.275	20 0	+17.125	17.230	17.336	17.443	17.551	17.658
55	0.280	20 30	+16.832	16.926	17.019	17.114	17.209	17.307
56	0.285	21 0	......	16.607	16.687	16.769	16.851	16.934
57	−0.291	21 30	......	16.279	16.345	16.413	16.479	16.548
		22 0	......	+15.950	16.000	16.051	16.102	16.154
		22 30	......	......	15.656	15.692	15.724	15.759
		23 0	......	......	15.321	15.338	15.354	15.371
		23 30	......	......	+14.999	+14.997	+14.997	+14.996

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894.0						*R*					
	52°	53°	54°	55°	56°	57°	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
19 0	....	....	− 2.58	− 2.94	− 3.29	− 3.65	74.44	75.79	78.60	81.53	84.63	87.86
19 30	....	+ 0.07	− 0.28	− 0.63	− 0.98	− 1.33	74.56	75.91	78.72	81.66	84.76	88.00
20 0	+2.86	2.52	+ 2.18	+ 1.83	+ 1.49	+ 1.14	74.66	76.02	78.83	81.77	84.88	88.13
20 30	+5.37	5.04	4.71	4.38	4.05	3.72	74.78	76.14	78.96	81.90	85.02	88.27
21 0	....	7.61	7.30	6.98	6.67	6.36	74.89	76.24	79.07	82.02	85.13	88.39
21 30	....	10.17	9.89	9.60	9.31	9.02	74.99	76.35	79.18	82.13	85.25	88.51
22 0	....	+12.71	12.44	12.19	11.92	11.66	75.09	76.45	79.29	82.24	85.37	88.63
22 30	....	....	14.92	14.69	14.46	14.22	75.20	76.56	79.40	82.36	85.49	88.76
23 0	....	....	17.26	17.06	16.86	16.67	75.30	76.67	79.51	82.47	85.61	88.88
23 30	....	....	+19.44	+19.28	+19.13	+18.97	.....	.....	.....	.....	.....	.....

1894 OCTOBER 10. ZONE 68. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	8.5	56.3	58.3	0.4	4.6	6.2	$c_3 d_2$	33 56.20	53	20	10.0	5.3	V	44.040	19 33 38.31	−14 29 6.23	−14 5493
2	6.0	43.8	45.6	47.4	49.5	51.8	a	35 17.25	55	24	10.0	8.6	III B	48.490	19 34 59.57	16 31 21.89	16 5399
3	8.9	15.1	17.2	19.5	21.6	23.8	c	35 19.45	55	24	“	“	V B	46.655	19 35 1.77	16 30 48.51	16 5400
4	9.1	47.9	50.3	52.1	53.9	56.0	e	35 22.32	55	24	“	“	VII A	45.600	19 35 4.65	16 36 55.07	16 5401
5	9.3	57.6	59.8	2.0	4.2	6.2	c	37 1.97	55	24	“	“	III	45.910	19 36 44.29	16 33 44.41	16 5412
6	9.2	19.9	22.1	24.2	28.8	30.2	$c_3 d_2$	37 19.97	55	24	“	“	VI B	39.590	19 37 2.27	16 28 33.97	16 5416
7	9.1	39.8	41.3	45.6	47.6	49.6	$b_2 c_3$	38 49.77	53	38	10.0	5.7	III B	48.130	19 38 31.85	14 45 9.17	14 5525
8	9.1	28.1	29.6	33.8	36.0	38.0	$b_2 c_3$	39 38.09	53	38	“	“	III A	44.210	19 39 20.18	14 50 19.62	14 5531
9	9.2	5.3	6.7	10.9	13.0	15.2	$b_2 c_3$	40 15.21	53	38	“	“	III B	(39)355	19 39 57.27	14 42 21.55	14 5534
10	9.0	49.0	50.8	52.9	54.7	56.9	a	41 22.29	53	58	10.0	6.0	I	45.650	19 41 4.39	−15 7 32.41	−15 5462
11	8.9	6.5	8.1	10.1	11.9	14.3	a	43 39.54	53	28	10.0	5.5	I	47.400	19 43 21.56	−14 38 3.38	−14 5559
12	9.1	14.1	15.9	17.7	19.8	22.0	a	45 47.29	53	42	10.0	5.6	I	45.125	19 45 29.32	14 51 19.87	14 5571
13	8.0	47.5	49.4	51.2	53.0	55.3	a	46 20.69	53	52	10.0	5.6	III	46.815	19 46 2.73	15 1 54.05	15 5484
14	8.6	50.4	52.0	56.3	58.3	0.5	$b_2 c_3$	47 0.54	56	4	10.0	7.6	III B	39.630	19 46 42.79	17 8 31.51	17 5776
15	8.9	22.3	24.3	26.5	28.7	30.8	c	47 26.53	56	4	“	“	V A	46.850	19 47 8.79	17 17 15.71	17 5779
16	8.8	33.4	34.9	39.1	41.2	43.4	$b_2 c_3$	48 43.37	52	58	10.0	6.2	III	43.140	19 48 25.29	14 6 41.28	14 5582
17	9.0	12.4	13.7	18.1	20.1	22.3	$b_2 c_3$	49 22.29	52	58	“	“	III	41.330	19 49 4.20	14 6 6.60	14 5583
18	8.8	42.6	44.7	46.8	49.0	51.0	c	49 46.83	52	58	“	“	III B	40.705	19 49 28.73	14 2 42.26	14 5585
19	9.2	45.3	47.0	49.0	51.0	53.2	a	59 18.49	53	44	10.0	5.3	I	46.040	19 59 0.38	14 53 32.16	15 5547
20	9.0	53.9	55.9	57.8	59.7	1.9	a	0 27.09	52	40	10.0	5.7	I	46.430	20 0 8.85	−13 49 36.78	−13 5570
21	9.0	17.5	19.3	21.1	23.1	25.3	a	0 50.50	52	40	“	“	III B	40.480	20 0 32.25	−13 44 32.91	−13 5572
22	8.3	43.8	45.5	47.6	49.4	51.7	a	3 16.95	53	24	10.0	5.6	I	43.440	20 2 58.76	14 32 40.54	14 5648
23	8.7	57.4	59.0	0.9	3.0	5.3	a	7 30.40	52	54	10.0	6.5	I A	42.115	20 7 12.12	14 5 26.24	14 5670
24	9.4	30.1	31.7	33.7	35.7	37.8	a	8 3.07	52	54	“	“	I B	41.330	20 7 44.77	13 58 45.68	14 5671
25	8.9	21.8	23.6	25.7	27.6	29.8	a	8 54.95	52	38	10.0	6.3	I	46.185	20 8 36.62	13 47 29.30	13 5616
26	8.6	30.6	32.5	34.3	36.3	38.5	a	10 3.86	54	0	10.0	5.6	I B	42.670	20 9 45.65	15 5 12.72	15 5597
27	9.0	8.5	10.0	14.2	16.4	18.6	$b_2 c_3$	10 18.53	54	0	“	“	III A	42.750	20 10 0.32	15 11 41.28	15 5599
28	9.5	8.6	10.6	12.7	15.0	17.1	c	11 12.81	52	40	10.0	6.2	III A	43.240	20 10 54.47	13 51 47.33	13 5625
29	8.8	7.6	9.7	11.8	14.0	16.0	c	12 11.83	53	6	10.0	5.9	V	48.180	20 11 53.52	14 16 10.45	14 5703
30	8.7	28.9	31.4	33.4	35.0	37.1	e	13 3.66	53	58	10.0	6.0	VII A	(42).010	20 12 45.42	−15 9 29.18	−15 5613
31	9.2	11.3	13.1	15.0	17.0	19.1	a	13 44.53	53	58	“	“	I A	42.775	20 13 26.28	−15 9 38.95	−15 5615
32	8.9	21.3	23.2	25.1	26.9	29.0	a	14 54 51	53	58	“	“	I B	42.885	20 14 36.24	15 3 15.20	15 5622
33	7.5	54.4	56.1	58.1	0.3	2.5	a	15 27.70	53	58	“	“	I	41.485	20 15 9.43	15 6 0.61	15 5626
34	5.5	8.5	10.4	12.4	14.2	16.4	a	15 41.80	53	58	“	“	III	40.810	20 15 23.52	15 5 49.48	15 5629
35	9.2	18.7	20.9	22.7	24.6	26.7	e	15 53.21	53	58	“	“	VII A	38.840	20 15 34.94	15 8 27.85	15 5631
36	9.0	45.6	47.4	49.4	51.3	53.4	■	18 18.74	53	16	10.0	5.4	I B	40.600	20 18 0.36	14 20 28.55	14 5733
37	8.1	24.2	26.0	27.8	29.9	32.0	a	18 57.31	53	16	“	“	I A	38.200	20 18 38.93	14 26 8.08	14 5734
38	9.3	40.9	42.8	44.7	46.6	48.9	■	20 14.12	53	16	“	“	I A	40.640	20 19 55.73	14 26 54.07	14 5736
39	9.4	14.6	16.7	18.9	21.1	23.1	c	20 18.89	53	30	10.0	6.0	III (A)	40.020	20 20 0.52	14 40 44.81	14 5737
40	9.1	43.1	45.0	47.3	49.5	51.6	c	20 47.31	53	30	“	“	V B	47.620	20 20 28.93	−14 36 45.46	−14 5740
41	9.0	27.5	29.2	31.2	33.0	35.4	a	23 0.55	52	58	10.0	5.3	I	48.480	20 22 42.10	−14 8 8.37	−14 5754
42	8.9	2.5	4.8	6.6	8.4	10.4	e	26 37.17	52	54	10.0	7.2	V (A)	46.620	20 26 18.68	14 6 48.96	14 5766
43	9.0	30.4	32.5	34.7	39.0	40.5	$c_3 d_2$	27 30.47	52	54	“	“	VI	44.000	20 27 11.97	14 2 46.60	14 5775
44	7.5	23.2	24.8	26.8	28.8	30.9	a	28 56.18	52	54	“	“	I	47.680	20 28 37 66	14 3 51.99	14 5781
45	9.4	26.8	28.8	30.7	32.7	34.8	a	30 0.04	52	54	“	“	I B	43.405	20 29 41.49	13 59 18.10	14 5788
46	9.3	1.7	3.8	5.7	8.0	10.1	c	30 5.87	52	54	“	“	III B	34.535	20 29 47.33	13 56 30.94	14 5790
47	7.9	29.7	31.6	33.5	35.6	37.8	a	32 3.12	54	20	10.0	6.5	I	46.780	20 31 44.68	15 29 37.01	15 5732
48	9.1	1.4	3.0	5.0	7.0	9.2	a	32 34.41	53	0	10.0	7.1	III	44.310	20 32 15.85	14 8 48.65	14 5802
49	9.5	18.7	20.3	24.5	26.5	28.8	$b_2 c_3$	33 28.75	53	50	10.0	7.1	III B	39.980	20 33 10.25	14 54 15.67	15 5736
50	9.1	37.0	38.9	41.1	45.3	47.0	$c_3 d_2$	33 36,88	53	50	“	“	VI A	47.330	20 33 18.39	−15 3 3.11	−15 5739
51	9.4	48.4	50.8	52.5	54.4	56.5	e	34 23.16	52	56	10.0	6.6	VII	41.895	20 34 4.57	−14 4 4.77	−14 5810
52	9.4	5.0	7.1	9.2	11.0	12.8	e	35 39.58	53	30	10.0	5.6	VII	41.670	20 35 21.03	14 38 0.96	14 5814
53	9.1	59.5	1.8	3.7	5.6	7.7	e	36 34.28	53	4	10.0	5.6	VII A	42.880	20 36 15.69	14 15 35.48	14 5821
54	9.3	39.8	42.2	44.1	45.8	48.0	e	37 14.61	53	4	“	“	(V) B	43.655	20 36 56.00	14 9 23.35	14 5826
55	9.2	58.9	1.0	3.1	7.3	8.9	$c_3 d_2$	37 58.88	53	4	“	“	VI	48.440	20 37 40.27	14 14 7.31	14 5829
56	9.3	6.1	8.2	10.1	12.0	14.0	e	38 40.55	54	12	10.0	6.1	VII	42.680	20 38 22.03	15 20 21.23	15 5769
57	9.1	33.3	35.6	37.3	39.2	41.2	■	39 7.78	54	12	“	“	VII A	45.130	20 38 49.26	15 24 20.56	15 5772
58	7.9	2.0	4.0	6.2	8.4	10.6	c	40 6.25	54	12	“	“	V A	43.820	20 39 47.71	15 23 53.98	15 5780
59	9.3	12.8	14.6	16.5	18.5	20.6	a	45 46.07	54	20	10.0	7.0	I B	48.030	20 45 27.47	15 26 44.05	15 5813
60	9.4	18.8	20.5	22.4	24.4	26.4	a	49 52.13	55	20	10.0	7.0	I A	39.800	20 49 33.57	−16 30 34.70	−16 5725
61	9.4	33.2	34.9	37.0	38.8	41.0	a	50 6.59	55	20	“	“	III B	44.460	20 49 48.02	−16 25 39.62	−16 5728
62	8.9	55.6	57.3	59.4	1.4	3.5	a	51 29.02	55	2	10.0	7.0	I A	44.570	20 51 10.42	16 14 4.22	16 5734
63	9.3	19.6	21.6	23.5	25.5	27.8	a	51 53.16	55	2	“	“	III B	(39).290	20 51 34.54	16 5 59.86	16 5738
64	8.8	15.2	17.0	18.9	20.9	23.1	a	52 48.51	54	24	10.0	5.9	III	44.570	20 52 29.83	15 32 50.20	15 5846
65	8.2	18.7	20.9	23.0	25.2	27.3	c	53 23.03	52	36	10.0	6.2	III	45.430	20 53 4.20	13 45 2.13	13 5807
66	9.3	52.6	54.7	57.0	1.1	2.7	$c_3 d_2$	53 52.66	53	20	10.0	5.3	V	42.990	20 53 33.89	14 28 18.47	14 5901
67	9.1	31.0	33.3	35.1	37.1	39.0	e	54 5.68	53	20	“	“	VII A	42.450	20 53 46.91	14 31 22.44	14 5902
68	9.2	52.3	54.0	56.0	57.9	0.1	a	57 25.41	53	22	10.0	4.6	I	46.930	20 57 6.60	14 31 28.72	14 5915
69	9.2	42.3	44.2	46.1	47.9	50.3	a	58 15.65	54	24	10.0	5.4	I	46.400	20 57 56.91	15 33 21.40	15 5874
70	9.0	32.4	34.3	36.1	38.0	40.2	a	59 5.78	55	2	11.5	7.9	I	45.750	20 58 47.08	−16 11 12.47	−16 5779

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
71	8.0	39.6	41.5	43.9	45.9	48.2	c	59 43.83	53	48	11.5	7.1	III	43.610	20 59 25.03	−14 56 29.76	−15 5881
72	7.9	22.6	24.4	26.4	28.3	30.4	a	1 55.74	53	14	10.0	5.0	I B	44.190	21 1 36.87	14 19 22.96	14 5936
73	9.3	38.3	40.3	42.0	44.1	46.1	a	2 11.49	53	14	"	"	III A	40.270	21 1 52.62	14 24 35.38	14 5937
74	9.3	38.3	39.8	44.1	46.2	48.4	b_2 c_3	2 48.33	53	14	"	"	III A(39).	390	21 2 29.45	14 24 18.44	14 5939
75	9.0	8.7	10.5	12.4	14.2	16.6	a	6 41.94	54	14	10.0	6.1	III	42.230	21 6 23.08	15 22 1.45	15 5910
76	8.8	4.5	6.5	8.8	11.0	13.1	c	7 8.79	54	14	"	"	III A	40.000	21 6 49.92	15 24 31.95	15 5913
77	9.4	0.5	2.6	4.6	6.9	9.0	c	8 4.73	53	8	10.0	5.6	V	44.465	21 7 45.78	14 16 42.22	14 5964
78	9.4	53.7	55.5	57.2	59.4	1.5	a	9 26.77	53	8	"	"	I B	48.200	21 9 7.80	14 14 37.27	14 5975
79	9.3	40.4	42.3	44.3	46.3	48.4	a	10 13.85	54	32	10.0	5.8	I	45.125	21 9 54.97	15 40 54.40	15 5932
80	9.3	42.4	44.0	48.2	50.4	52.5	b_2 c_3	10 52.46	52	48	10.0	6.4	III B	42.090	21 10 33.44	−13 52 41.93	−14 5977
81	9.0	2.4	4.3	6.5	8.7	10.7	c	11 6.53	52	48	"		V (A)	41.010	21 10 47.52	−13 58 48.20	−14 5978
82	9.2	13.2	14.8	18.8	21.0	23.0	b_2 c_3	12 23.12	52	40	10.0	6.6	III A	39.110	21 12 4.08	13 50 9.97	14 5987
83	8.7	37.4	39.1	41.0	43.0	45.3	a	13 10.40	52	40	"	"	III B	41.760	21 12 51.35	13 44 34.83	13 5900
84	9.0	21.4	23.6	25.8	27.9	30.0	c	13 25.75	52	40	"	"	V A	47.040	21 13 6.70	13 52 42.14	14 5990
85	8.0	26.5	28.2	30.1	32.1	34.3	a	14 59.50	52	46	10.0	6.0	III	47.130	21 14 40.44	13 55 28.77	14 5999
86	9.3	3.3	4.9	6.9	8.8	11.1	a	16 36.34	53	20	10.0	5.6	I	41.880	21 16 17.30	14 27 47.82	14 6003
87	9.0	55.0	56.4	0.6	2.8	4.9	b_2 c_3	17 4.94	54	10	10.0	5.0	III (A)	40.860	21 16 45.95	15 20 45.01	15 5963
88	9.3	26.3	28.1	30.0	32.1	34.3	a	17 59.60	54	10	"	"	I B	43.280	21 17 40.60	15 15 3.69	15 5972
89	9.4	35.5	37.4	39.6	41.9	44.1	c	18 39.71	55	44	10.0	5.3	III	42.060	21 18 20.80	16 51 58.74	17 6253
90	9.4	23.3	25.3	27.1	29.1	31.2	a	19 56.88	55	44	"	"	I (B)	45.840	21 19 37.96	−16 49 56.29	−17 6262

Reduction Elements. Zone 68.

1894.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
October 10.3....	+0.048	−0.020	−0.439	+0.006	−0.004	−0.439
10.5....	−0.036	+0.013				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	υ Sagittarii		κ Aquilae		63 Sagittarii		ε Aquarii		ν Aquarii		ζ Capricorni	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 58 8.15		46 6 8.20		52 46 7.90		48 42 8.50		50 38 8.50		61 42 7.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	48.180	6 32.94	44.570	5 25.06	43.985	5 13.11	47.920	6 28.17	44.490	5 22.51	43.315	5 0.32
II Red. to Mer......	.135	1.65	.565	1.73	.875	1.67	.850	1.70		1.67	.230	1.57
VI Inclination	47.940		.410		.765		.690		.245	0.55	.070	
VII Refraction.......	.910	1 20.8	.345	59.0	.750	1 14.7	.700	1 4.9	.280	1 9.6	.075	1 45.8

	β Aquarii	
	° ′ ″	
CIRCLE READING.	44 52 7.90	
	r	′ ″
I Microm. Eq......	45.630	5 45.58
II Red. to Mer......	.640	1.74
VI Inclination	.480	
VII Refraction.......	.455	56.9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
υ Sagittarii	19 16 17.50	11	−0.37	−35.08	55 6 3.5	48.5
λ Ursae Minoris	19 28 27.73	3	+19.10	[−35.15]	309 58	....
κ Aquilae	19 31 49.30	11	−0.32	35.09	46 12 34.0	50.1
63 Sagittarii	19 56 40.76	11	−0.36	−35.23	52 52 37.4	49.7
ε Aquarii	20 42 34.77	11	−0.33	−35.18	48 49 43.3	49.4
ν Aquarii	21 4 27.90	11	−0.34	−35.20	50 44 42.8	48.7
ζ Copricorni	21 21 16.03	11	−0.42	35.18	61 48 55.4	48.6
β Aquarii	21 26 37.34	11	−0.31	−35.19	44 58 52.1	49.7

h		s
19.580	............dt	−35.133
	Hourly rate	−0.0352
		° ′ ″
	Adopted Equator Point...........	38 56 49.24

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 25	29.525	59.1	56.2
20 23	29.525	55.0	53.9
21 30	29.535	53.4	52.3

Note.

76. Close double; equal components.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A*=α to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.352	19 30	……	+17.581	+17.697	+17.813	+17.931	+18.050
53	0.358	20 0	+17.187	17.292	17.398	17.505	17.612	+17.722
54	0.364	20 30	16.889	16.983	17.076	17.172	17.268	……
55	0.370	21 0	16.578	16.659	16.740	16.822	16.904	……
56	0.377	21 30	+16.258	+16.323	+16.392	+16.458	+16.526	……
57	−0.383							

APPARENT RIGHT ASCENSION.	*D*=Z. D. S. to 1894.0						*R*				
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′
h m	″	″	″	″	″	″	″	″	″	″	″
19 30	….	−0.14	−0.49	−0.85	−1.20	−1.55	73.62	76.33	79.16	82.15	85.27
20 0	+2.63	+2.28	+1.93	+1.58	+1.23	+0.88	73.81	76.52	79.36	82.36	85.49
20 30	5.13	4.79	4.45	4.11	3.77	….	74.00	76.72	79.56	82.57	85.70
21 0	7.67	7.34	7.02	6.70	6.37	….	74.10	76.82	79.67	82.68	85.82
21 30	+10.19	+9.90	+9.60	+9.29	+8.99	….	74.22	76.95	79.80	82.81	85.96

1894 OCTOBER 11. ZONE 69. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.3	43.6	46.0	48.2	50.3	52.3	c	32 48.09	54 56 9.6	4.0	III B	43.955	19 32 29.57	−16 1 55.74	−16 5383
2	9.0	29.8	31.8	33.5	35.5	37.8	a	34 3.24	54 56 “	“	I	47.660	19 33 44.72	16 6 16.27	16 5390
3	8.7	24.0	25.8	27.6	29.7	31.8	a	34 57.34	54 56 “	“	I B	45.510	19 34 38.80	16 2 22.72	16 5398
4	8.9	25.0	27.0	28.9	30.8	33.0	a	35 58.49	54 56 “	“	I B	40.710	19 35 39.94	16 0 50.98	16 5404
5	9.0	47.3	49.1	51.1	53.1	55.3	a	-37 20.80	55 20 10.0	5.2	I	42.220	19 37 2.28	16 28 33.32	16 5416
6	8.3	19.6	21.3	23.3	25.2	27.5	a	45 52.85	54 16 10.0	5.5	I	44.190	19 45 34.12	15 25 4.86	15 5481
7	9.0	25.8	27.6	29.4	31.5	33.7	■	58 59.15	54 50 9.4	4.5	I	45.210	19 58 40.34	15 59 20.05	16 5491
8	8.8	55.3	57.4	59.5	1.8	3.8	c	58 59.57	54 50 “	“	III B	48.510	19 58 40.75	15 57 12.37	16 5492
9	8.9	30.1	32.0	34.0	36.0	38.3	a	0 3.63	54 50 “	“	I B	46.725	19 59 44.80	15 56 36.22	16 5499
10	8.7	52.7	54.5	56.4	58.5	0.6	a	0 26.10	54 50 “	“	I A	44.440	20 0 7.28	−16 2 18.08	−16 5500
11	9.4	36.5	38.3	40.2	42.2	44.3	a	8 9.60	53 2 10.2	5.6	I	45.870	20 7 50.50	−14 11 25.66	−14 5672
12	8.1	20.2	22.0	24.0	25.9	28.0	a	8 53.32	53 2 “	“	I	46.670	20 8 34.22	14 11 40.62	14 5677
13	8.7	10.1	11.7	15.9	18.1	20.3	b_2 c_3	9 20.23	54 46 10.0	6.0	III	44.070	20 9 1.30	15 54 57.30	16 5536
14	8.9	38.4	40.3	42.7	44.8	46.9	c	9 42.63	54 46 “	“	V B	46.530	20 9 23.69	15 52 33.24	16 5539
15	7.9	32.9	34.9	36.8	38.8	40.9	■	12 6.43	54 58 10.0	6.1	I	47.730	20 11 47.49	16 8 4.76	16 5550
16	9.3	48.2	50.2	52.1	54.1	56.2	■	12 21.73	54 58 “	“	III	48.680	20 12 2.79	16 8 24.58	16 5552
17	8.4	3.1	4.9	7.0	9.0	11.1	■	13 36.60	54 58 “	“	I A	(44).100	20 13 17.65	16 10 8.35	16 5558
18	8.8	55.4	57.2	59.3	1.2	3.3	a	15 28.55	52 50 10.0	6.3	I	43.540	20 15 9.37	13 58 38.50	14 5718
19	8.0	43.3	45.3	47.7	49.8	51.9	c	15 47.61	53 4 10.0	6.5	V	42.920	20 15 28.44	14 12 30.70	14 5719
20	8.0	51.0	52.8	54.7	56.6	58.8	■	20 24.04	52 44 9.6	5.0	I	47.025	20 20 4.79	−13 53 42.06	−14 5738
21	8.3	28.9	30.7	32.7	34.7	36.9	a	21 2.04	52 44 “	“	I	43.600	20 20 42.78	−13 52 36.67	−14 5742
22	8.4	25.9	27.7	29.6	31.7	33.8	a	21 59.00	52 44 “	“	I	42.790	20 21 39.73	13 52 20.92	14 5745
23	8.4	13.2	15.0	16.8	18.8	21.0	a	25 46.22	52 46 10.0	6.0	III	45.250	20 25 26.91	13 55 9.05	14 5765
24	9.2	26.5	28.5	30.4	32.4	34.6	a	26 59.87	53 40 10.0	6.2	I	40.780	20 26 40.63	14 47 44.08	14 5769
25	8.4	25.0	26.6	31.0	33.1	35.3	b_2 c_3	27 35.16	52 40 9.6	5.7	III A	47.690	20 27 15.83	13 53 7.39	14 5776
26	8.8	12.9	15.1	17.1	18.9	20.9	e	27 47.65	52 40 “	“	V B	49.400	20 27 28.31	13 47 16.04	13 5696
27	9.0	40.9	43.1	45.1	46.8	48.8	e	28 15.60	52 40 “	“	VII A	48.700	20 27 56.27	13 53 29.24	14 5780
28	8.9	24.1	26.5	28.3	30.1	32.1	e	28 58.90	52 40 “	“	V B	38.935	20 28 39.54	13 43 56.47	13 5702
29	9.0	47.5	49.7	51.7	53.5	55.5	e	29 22.26	52 40 “	“	VII B	38.960	20 29 2.90	13 43 58.24	13 5704
30	8.9	1.8	3.9	6.1	8.2	10.3	c	31 6.07	54 44 10.0	5.5	VI	44.410	20 30 46.88	−15 52 58.43	−16 5646
31	9.2	4.7	6.5	8.6	10.5	12.6	a	32 38.11	54 44 “	“	I B	46.780	20 32 18.90	−15 50 26.60	−15 5734
32	7.9	18.8	20.9	22.7	24.8	26.9	a	34 52.15	53 12 10.0	6.1	I	47.980	20 34 32.78	14 21 57.35	14 5812
33	8.0	40.7	42.9	45.1	47.4	49.4	c	35 45.11	53 42 10.0	5.3	III	47.950	20 35 25.77	14 51 59.16	15 5755
34	8.6	44.5	46.3	48.1	50.1	52.3	a	38 17.75	54 24 10.0	5.9	I	44.270	20 37 58.45	15 32 48.58	15 5767
35	8.9	56.2	58.1	0.0	2.0	4.1	a	39 29.53	54 14 10.0	5.5	I B	43.410	20 39 10.18	15 19 18.97	15 5775
36	9.3	33.1	34.9	36.8	38.7	41.0	a	43 6.16	52 48 9.5	5.5	I B	37.680	20 42 46.65	13 51 24.96	14 5852
37	8.6	49.1	51.0	53.0	54.8	57.1	a	43 22.26	52 48 “	“	I	37.670	20 43 2.76	13 54 36.91	14 5855
38	9.0	21.9	23.5	27.6	29.6	31.7	b_2 c_3	43 31.82	52 48 “	“	III	38.130	20 43 12.31	13 54 47.43	14 5856
39	8.2	10.6	12.5	14.3	16.4	18.6	a	44 43.75	52 48 “	“	III A	46.955	20 44 24.24	14 0 48.09	14 5861
40	7.9	16.1	18.6	20.3	24.5	26.7	b_1 c_2	50 28.86	56 24 10.0	6.6	I B	44.270	20 50 9.57	−17 29 38.48	−17 6127

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	'	"	"		r	h m s	° ' "	°
41	8.0	46.4	48.6	50.9	53.0	55.1	c	50 50.81	56	24	10.0	6.6	III A	48.810	20 50 31.53	−17 37 31.99	−17 6129
42	9.1	27.8	29.7	31.5	33.4	35.6	a	52 1.05	54	10	9.8	4.8	III	47.370	20 51 41.56	15 19 43.92	15 5842
43	6.0	56.0	57.8	59.8	1.8	3.9	a	53 29.25	53	44	10.0	4.2	I	42.610	20 53 9.71	14 52 9.78	15 5848
44	8.8	48.9	50.5	53.1	10.2	11.9	$(d_1 e_4)$	53 40.39	54	56	10.0	5.6	VI	48.300	20 53 20.95	16 6 6.08	16 5753
45	8.8	29.3	31.7	33.6	35.6	37.4	e	55 4.13	53	10	10.0	5.6	VII	45.560	20 54 44.52	14 19 9.66	14 5906
46	9.0	9.9	11.8	13.7	15.5	17.8	a	57 43.12	53	38	10.0	5.7	I	44.060	20 57 23.52	14 46 36.67	14 5917
47	8.5	55.8	58.0	0.2	2.2	4.5	c	58 0.15	54	4	10.0	5.5	III	46.820	20 57 40.59	15 13 31.92	15 5872
48	9.0	16.5	18.6	20.7	23.0	25.1	c	0 20.79	54	0	10.0	5.7	III B	47.380	21 0 1.18	15 6 29.54	15 5883
49	8.9	55.4	57.2	59.1	1.0	3.3	a	2 28.45	52	34	10.0	5.2	I	45.370	21 2 8.71	13 42 57.37	13 5853
50	8.8	5.6	7.2	9.1	11.1	13.2	a	3 38.48	52	34	"	"	I	48.100	21 3 18.73	−13 43 49.01	−13 5860
51	8.3	50.9	52.7	54.5	56.5	58.6	a	4 23.99	53	20	10.0	5.4	III A	42.600	21 4 4.29	−14 31 20.99	−14 5946
52	9.1	26.7	28.8	31.1	33.2	35.2	c	4 31.01	53	20	"	"	V B	42.370	21 4 11.29	14 24 52.74	14 5948
53	8.7	18.8	20.7	22.6	24.6	26.7	a	5 52.02	53	20	"	"	I	42.570	21 5 32.30	14 28 5.13	14 5951
54	8.9	13.9	15.8	17.6	19.6	21.8	a	6 47.08	53	20	"	"	I B	50.390	21 6 27.34	14 27 21.47	14 5956
55	9.2	38.6	40.5	42.3	44.3	46.5	a	10 12.05	55	18	10.0	6.4	I B	45.490	21 9 52.42	16 23 52.93	16 5826
56	8.2	16.8	19.0	21.2	23.4	25.5	c	10 21.19	55	18	"	"	III A	45.630	21 10 1.56	16 30 22.71	16 5827
57	8.8	3.6	5.5	7.5	9.4	11.5	a	11 36.98	54	22	10.0	6.3	III	45.020	21 11 17.27	15 30 55.09	15 5939
58	6.0	0.7	2.9	4.8	7.1	9.2	c	12 4.95	52	32	10.0	5.2	V	47.990	21 11 45.10	13 41 47.94	13 5897
59	9.0	50.0	52.0	53.8	55.6	58.0	a	14 23.27	53	40	9.7	5.5	I	43.250	21 14 3.47	14 48 16.49	15 5949
60	8.1	31.5	33.3	35.2	37.2	39.3	a	20 4.56	52	48	9.5	5.2	I	40.870	21 19 44.63	−13 55 27.33	−14 6019
61	8.9	37.3	39.2	41.1	43.1	45.2	a	21 10.45	52	48	"	"	I A	45.950	21 20 50.52	−14 0 16.96	−14 6024
62	7.5	42.0	43.7	45.7	47.7	49.9	a	22 15.08	52	48	"	"	I A	49.150	21 21 55.13	14 1 17.60	14 6026
63	8.8	0.4	2.2	4.1	6.2	8.3	a	22 33.51	52	48	"	"	III A	44.290	21 22 13.56	13 59 46.70	14 6029
64	......	43.0	44.9	47.0	49.3	51.5	c	22 47.15	52	48	"	"	III B	40.070	21 22 27.19	13 52 0.93	14 6030
65	7.8	58.6	0.3	2.3	4.2	6.2	a	24 31.66	53	24	10.0	5.5	I B	(39).230	21 24 11.71	14 27 44.67	14 6039
66	9.1	52.3	54.1	56.1	58.0	0.2	a	25 25.49	53	24	"	"	I A	44.570	21 25 5.54	14 35 51.54	14 6045
67	9.0	18.6	20.0	24.0	26.3	28.5	$b_2 c_3$	25 28.46	53	24	"	"	III A	47.000	21 25 8.51	14 36 39.45	14 6046
68	8.9	26.4	27.8	32.1	34.3	36.4	$b_2 c_3$	26 36.36	52	48	10.0	6.0	III	43.860	21 26 16.36	13 56 25.15	14 6051
69	8.8	21.7	23.3	27.5	29.6	31.7	$b_2 c_3$	27 31.72	52	48	"	"	III B	42.360	21 27 11.71	13 52 44.02	14 6058
70	9.1	35.6	37.8	40.0	42.2	44.4	c	27 40.01	52	48	"	"	V B	46.450	21 27 20.00	−13 54 3.39	−14 6059
71	9.2	24.4	26.5	28.4	30.3	32.3	e	27 59.03	52	48	"	"	V A	(42).380	21 27 39.02	−13 59 11.20	−14 6062
72	8.9	3.6	5.9	7.8	9.6	11.6	e	28 38.35	52	48	"	"	VII	47.720	21 28 18.33	13 57 41.16	14 6066
73	7.7	34.8	37.1	38.8	40.6	42.7	e	29 9.46	52	48	"	"	VII	41.385	21 28 49.43	13 55 40.46	14 6070
74	8.8	8.1	10.3	12.2	14.1	16.0	e	30 42.49	55	0	10.0	6.4	V	43.760	21 30 22.58	16 8 29.77	16 5892
75	8.7	35.8	37.5	39.3	41.2	43.6	a	33 8.75	52	50	10.0	5.4	I	45.900	21 32 48.68	13 59 0.35	14 6088
76	8.5	34.8	36.5	38.6	40.5	42.7	a	34 7.96	53	22	9.5	5.0	I	44.540	21 33 47.90	14 30 35.11	14 6095
77	9.1	34.2	36.4	38.5	40.6	42.8	c	34 38.51	55	18	10.0	6.2	V	46.765	21 34 18.56	16 27 26.81	16 5909
78	9.2	40.2	42.0	44.1	46.0	48.1	a	36 13.41	53	18	10.0	5.2	I B	44.510	21 35 53.32	14 23 22.01	14 6101
79	5.5	22.5	24.5	26.8	28.9	31.0	c	36 26.75	53	18	"	"	III A	43.790	21 36 6.66	14 29 35.40	14 6102
80	8.5	19.6	21.5	23.8	26.0	28.1	c	37 23.81	55	4	10.0	6.3	III	45.550	21 37 3.82	−16 13 0.81	−16 5924
81	6.0	59.5	1.5	5.7	7.2	9.9	$c_4 d_3$	37 57.25	53	42	10.0	5.2	VI	46.960	21 37 37.17	−14 51 25.70	−15 6046
82	6.6	53.5	55.6	57.8	2.0	3.5	$c_3 d_2$	38 53.50	54	4	9.1	4.0	V	43.920	21 38 33.43	15 12 26.79	15 6052
83	8.8	8.0	10.3	12.4	14.6	16.8	c	40 12.43	53	0	10.0	5.3	V	43.120	21 39 52.28	14 8 9.65	14 6116
84	9.0	48.1	50.3	52.3	54.0	56.0	e	40 22.77	53	0	"	"	VII B	46.640	21 40 2.63	14 6 5.62	14 6119
85	8.8	59.5	1.7	3.9	6.1	8.2	c	42 3.89	54	0	10.5	5.8	VI	44.710	21 41 43.77	15 8 43.31	15 6064
86	8.1	56.5	58.2	0.1	2.0	4.2	a	46 29.47	52	50	10.3	6.3	I	42.270	21 46 9.24	13 57 48.94	14 6144
87	5.8	37.7	39.5	41.4	43.4	45.6	a	48 10.80	52	52	10.0	5.3	I	47.190	21 47 50.55	14 1 21.68	14 6149
88	8.8	41.5	43.7	45.7	47.4	49.4	e	48 16.10	53	30	10.0	5.5	VII	47.630	21 47 55.88	14 39 36.58	14 6150
89	8.0	49.3	51.4	53.5	55.7	58.0	c	49 53.59	54	36	10.0	5.7	III	41.910	21 49 33.41	15 43 47.30	15 6092
90	9.0	49.4	51.3	53.3	55.2	57.4	a	51 22.60	52	56	10.0	6.4	I	43.740	21 51 2.32	−14 4 16.09	−14 6166
91	9.0	2.7	4.5	6.5	8.4	10.5	a	52 35.87	53	26	10.0	5.6	I	41.930	21 52 15.59	−14 33 42.23	−14 6175
92	8.9	1.1	3.0	4.9	6.8	9.1	a	54 34.24	52	46	10.0	6.0	I	44.490	21 54 13.91	13 54 29.14	14 6181
93	7.9	1.0	2.9	4.8	6.8	9.0	a	55 34.21	53	10	10.0	5.3	I B	39.020	21 55 13.88	14 13 33.24	14 6188
94	9.0	32.3	34.0	36.0	38.0	40.1	a	56 5.41	53	10	"	"	III A	43.070	21 55 45.08	14 21 17.36	14 6191
95	8.6	42.5	44.7	46.8	49.0	51.2	c	56 46.85	54	44	10.0	5.6	III	45.120	21 56 26.60	15 52 47.40	16 6001
96	9.8	39.0	40.7	42.7	44.8	47.0	a	58 12.56	55	58	10.0	6.3	IV	44.150	21 57 52.34	17 6 33.34	17 6424
97	9.1	54.7	56.6	58.6	0.4	2.6	a	0 27.89	53	10	10.0	6.1	I B	44.740	22 0 7.52	14 15 21.59	14 6205
98	5.3	49.5	51.4	53.1	55.2	57.3	a	1 22.63	53	10	"	"	I A	43.200	22 1 2.23	14 21 17.58	14 6209
99	7.9	57.7	59.6	1.3	3.4	5.6	a	2 30.92	53	56	10.0	5.6	I B	36.270	22 2 10.54	14 58 41.73	15 6143
100	8.9	3.4	5.3	7.1	9.0	11.3	a	3 36.65	53	56	"	"	I A	45.420	22 3 16.26	−15 8 1.17	−15 6150
101	9.0	6.2	8.0	10.0	12.0	14.1	a	4 39.47	53	56	"	"	I B	50.170	22 4 19.06	−15 3 5.96	−15 6151
102	8.7	42.0	44.1	46.3	50.4	52.1	$c_3 d_2$	4 42.02	53	14	10.5	4.7	VI	45.640	22 4 21.58	14 22 54.14	14 6223
103	9.0	13.5	15.3	17.2	19.2	21.4	a	7 46.65	53	14	"	"	I	47.990	22 7 26.18	14 23 34.21	14 6231
104	8.0	30.6	32.3	34.2	36.2	38.5	a	8 3.69	53	14	"	"	III	42.590	22 7 43.21	14 21 53.19	14 6233
105	7.9	0.3	2.1	4.0	6.0	8.3	a	9 33.74	55	6	10.2	7.0	I A	45.985	22 9 13.34	16 18 14.93	16 6046
106	8.6	35.7	37.8	40.1	42.3	44.4	c	9 40.07	55	6	"	"	III B	45.870	22 9 19.66	16 11 49.00	16 6047
107	8.8	49.7	51.7	53.4	55.3	57.5	a	11 22.87	53	24	10.0	5.5	I	44.820	22 11 2.36	14 32 33.88	14 6242
108	8.4	33.8	35.7	37.6	39.5	41.8	a	12 7.05	53	34	10.0	5.4	III	41.230	22 11 46.54	14 41 27.62	14 6245
109	9.0	7.9	10.2	12.2	14.4	16.7	c	12 12.29	53	34	"	"	V B	44.770	22 11 51.78	14 39 24.23	14 6247
110	8.7	17.6	19.0	23.3	25.5	27.7	$(b_2 c_3)$	13 27.62	54	22	10.0	6.2	III	45.400	22 13 7.13	−15 30 49.31	−15 6188
111	8.9	3.3	5.0	7.0	9.0	11.2	a	14 36.66	54	54	10.0	6.1	III	41.970	22 14 16.18	−16 1 45.27	−16 6063
112	8.9	2.1	4.2	6.3	8.6	10.7	c	15 6.39	54	8	10.0	5.6	III	44.540	22 14 45.87	15 16 31.76	15 6195
113	9.0	43.4	45.4	47.4	49.7	51.8	c	15 47.55	53	20	10.0	5.4	V	45.630	22 15 26.99	−14 28 51.86	−14 6262

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
114	8.7	33.6	35.5	37.4	39.1	41.5	a	18 6.79	53 38 10.3	5.8	I B	43.730	22 17 46.21	—14 43 0.80	—14 6269
115	8.8	9.0	10.7	12.7	14.6	16.9	a	18 42.17	53 38 "	"	I (A)	42.500	22 18 21.59	14 49 2.77	15 6209
116	8.8	29.3	30.8	32.8	34.9	37.0	a	20 2.30	53 22 10.0	5.2	I	43.890	22 19 41.69	14 30 14.69	14 6277
117	8.0	8.7	10.6	12.5	14.5	16.6	a	20 42.11	54 44 9.6	5.6	III	42.490	22 20 21.55	15 51 53.41	16 6082
118	8.9	34.9	37.0	39.3	43.4	45.2	c_3 d_2	23 34.96	55 2 10.0	6.8	V	44.550	22 23 14.36	16 10 35.50	16 6088
119	8.9	21.3	23.5	25.6	27.8	30.0	c	27 25.65	53 32 10.0	5.6	V	46.020	22 27 4.95	14 40 58.37	14 6303
120	8.8	9.0	11.1	13.4	15.5	17.6	c	31 13.33	53 24 10.0	6.0	III	46.910	22 30 52.59	—14 33 13.11	—14 6312
121	8.5	9.7	11.8	14.1	16.1	18.4	c	32 14.03	53 2 10.0	5.1	III	46.630	22 31 53.26	—14 11 6.26	—14 6315
122	8.8	36.6	38.3	40.3	42.3	44.6	a	35 9.95	54 40 10.0	5.6	I	40.960	22 34 49.20	15 47 20.79	16 6127
123	8.1	45.4	47.2	49.2	51.2	53.4	a	39 18.71	54 0 10.0	5.5	I	43.685	22 38 57.89	15 8 10.40	15 6264
124	7.8	18.4	20.6	22.8	25.0	27.0	c	39 22.77	54 0 "	"	III A	45.650	22 39 1.95	15 12 2.69	15 6265
125	8.9	19.5	21.6	23.7	25.7	28.0	c	40 23.71	53 36 10.0	5.7	III	43.470	22 40 2.87	14 44 7.05	14 6340
126	8.6	4.7	6.7	9.0	11.1	13.1	c	41 8.93	53 14 10.0	5.5	V	42.150	22 40 48.07	14 21 42.43	14 6343
127	8.7	0.6	2.6	4.5	6.5	8.5	a	42 34.04	54 30 10.0	6.0	III	47.980	22 42 13.17	15 39 35.25	15 6274
128	6.0	10.5	12.7	14.5	16.5	18.4	e	42 45.09	53 26 10.0	5.6	V	46.250	22 42 24.20	14 35 0.88	14 6346
129	9.0	0.7	2.6	4.5	6.5	8.6	a	44 33.83	52 40 10.5	6.3	III	45.705	22 44 12.91	13 48 47.37	14 6353
130	8.4	22.7	24.8	27.1	29.2	31.3	c	45 27.03	53 26 10.0	5.7	III	47.250	22 45 6.11	—14 35 18.12	—14 6355
131	8.9	58.7	0.9	5.0	6.5	9.2	c_4 d_3	45 56.58	52 30 10.0	5.3	VI	42.660	22 45 35.64	—13 37 50.52	—13 6284
132	8.8	9.2	11.5	13.4	15.2	17.2	e	48 43.65	55 0 10.0	6.5	VII	47.140	22 48 22.73	16 9 23.53	16 6170
133	9.0	59.0	0.9	3.2	5.3	7.3	c	50 3.15	53 26 9.7	4.8	V	44.895	22 49 42.18	14 34 33.97	14 6366
134	8.4	10.0	12.0	14.0	16.3	18.4	c	51 14.15	52 58 10.0	5.0	V	41.030	22 50 53.17	14 5 19.35	14 6370
135	9.0	27.0	29.1	31.0	32.9	35.0	e	52 1.69	52 32 10.3	6.0	VII	43.660	22 51 40.69	13 40 10.40	13 6306
136	7.6	7.8	9.5	11.6	13.4	15.5	a	54 40.79	52 28 10.0	5.3	I	44.730	22 54 19.76	13 36 25.00	13 6318
137	9.1	2.9	4.7	6.7	8.7	10.8	a	56 36.10	53 22 9.3	4.5	I	44.770	22 56 15.06	14 30 27.19	14 6389
138	8.9	15.2	16.9	19.0	21.0	23.2	a	57 48.32	52 44 10.0	5.2	I	44.230	22 57 27.26	13 52 15.91	14 6395
139	8.8	53.3	55.3	57.4	59.6	1.7	c	57 57.47	52 44 "	"	III	45.160	22 57 36.41	13 52 35.40	14 6396
140	8.8	33.7	34.8	37.0	39.1	41.2	c	58 36.97	52 44 "	"	V	47.490	22 58 15.90	—13 53 21.35	—14 6397
141	8.8	46.6	48.6	50.9	53.0	55.2	c	59 50.87	54 0 10.0	5.0	III	42.950	22 59 29.80	—15 7 56.45	—15 6339
142	8.8	36.1	38.3	40.4	42.5	44.7	c	0 40.41	53 48 9.7	4.5	III	44.100	23 0 19.33	14 56 17.35	15 6342
143	8.0	57.2	59.3	1.5	3.7	5.6	c	1 1.47	53 48 "	"	V A	42.690	23 0 40.38	14 59 5.13	15 6343
144	9.0	9.0	11.2	13.1	15.1	17.0	e	1 43.57	54 0 10.0	5.3	VII	45.030	23 1 22.48	-15 8 39.16	—15 6347

Reduction Elements. Zone 69.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 11.3....	−+0.067	-0.059	—0.450	+0.040	—0.054	-0.355
11.5 ...	+0.014	-0.050	--0.260			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		h Sagittarii		*f* Sagittarii		63 Sagittarii		Lalande 38458		σ Aquarii		υ Aquarii	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		63 56 2.55		58 50 8.10		52 46 7.45		45 54 7.50		50 4 8.50		60 4 8.25	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.......		5 47.17	46.535	6 1.85	43.915	5 12.32	45.320	5 39.13	41.590	4 27.77	45.880	5 49.04
II	Red. to Mer......		1.55	.470	1.60	.880	1.67	.280	1.73	.540	1.70		1.56
VI	Inclination	45.650	2.04	.330		.720		.150		.380		.670	0.55
VII	Refraction	.620	1 57.1	.290	1 35.0	.695	1 15.8	.100	59.6	.330	1 9.3	.650	1 40.7

		λ Aquarii		c^2 Aquarii	
		° ′ ″		° ′ ″	
CIRCLE READING.		46 58 7.60		60 34 7.70	
		r	′ ″	r	′ ″
I	Microm. Eq.......		5 54.79	44.940	5 31.40
II	Red. to Mer......		1.72	.910	1.58
VI	Inclination	46.070	2.04	.700	
VII	Refraction	.020	1 2.4	.670	1 43.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
λ Ursae Minoris.	19 28 26. 62	5	- 15. 59	[—31. 90]	309 58	. . . .
h Sagittarii	19 30 54. 72	11	— 0. 34	—36. 03	64 3 50. 4	[44. 5]
f Sagittarii	19 40 49. 98	11	— 0. 31	—36. 06	58 57 46. 6	48. 6
63 Sagittarii	19 56 41. 47	11	— 0. 28	—36. 04	52 52 37. 2	49. 4
Lalande 38458.	20 3 6. 09	11	— 0. 26	—36. 07	46 0 48. 0	49. 5
σ Aquarii.	22 25 42. 13	11	— 0. 27	—36. 15	50 9 47. 3	49. 1
υ Aquarii	22 29 33. 97	11	- 0. 32	--36. 20	60 11 40. 1	48. 9
λ Aquarii	22 47 44. 90	11	— 0. 26	—36. 12	47 5 8. 6	49. 1
c^2 Aquarii	23 4 27. 87	11	— 0. 32	—36. 07	60 41 23. 8	47. 5
α Ursae Minoris.	1 21 21. 05	5	+12. 65	[—39. 53]	310 12	. . . .

h 19. 798. . . . . *dt*		s —36. 050
	Hourly rate	— 0. 0293
	Adopted Equator Point.	° ′ ″ 38 56 48. 87

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 26	29. 975	58. 4	57. 0
20 23	29. 985	54. 4	54. 2
21 15	30. 015	54. 0	53. 7
22 5	30. 015	53. 4	53. 8
23 6	30. 025	51. 5	50. 8

Notes.

16. Suspected close double.
64. Close double.
96. Difficult.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	—0. 280	19 30	. . . . . .	. . . . . .	+17. 718	+17. 835	+17. 954	. . . . . .
53	0. 284	20 0	+17. 207	+17. 313	17. 419	17. 526	17. 634	. . . . . .
54	0. 289	20 30	16. 909	17. 004	17. 097	17. 193	17. 289	+17. 386
55	0. 293	21 0	16. 597	16. 678	16. 760	16. 840	16. 922	17. 006
56	0. 298	21 30	16. 276	16. 341	16. 409	16. 475	16. 541	16. 611
57	—0. 302	22 0	15. 951	16. 002	16. 052	16. 105	16. 155	+16. 206
		22 30	15. 629	15. 664	15. 698	15. 732	15. 767	. . . . . .
		23 0	+15. 314	+15. 332	+15. 350	+15. 366	+15. 384	. . . . . .

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894.0						*R*					
	52°	53°	54°	55°	56°	57°	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
19 30	. . . . .	. . . . .	— 0. 55	— 0. 90	— 1. 25	. . . . .	74. 64	76. 00	78. 81	81. 75	84. 86	88. 10
20 0	+ 2. 56	+ 2. 22	+ 1. 87	+ 1. 52	+ 1. 17	. . . . .	74. 89	76. 24	79. 07	82. 02	85. 13	88. 39
20 30	5. 04	4. 70	4. 36	4. 03	3. 69	+ 3. 35	75. 09	76. 45	79. 29	82. 24	85. 37	88. 63
21 0	7. 59	7. 28	6. 95	6. 62	6. 29	5. 97	75. 18	76. 54	79. 38	82. 34	85. 47	88. 74
21 30	10. 11	9. 82	9. 51	9. 21	8. 90	8. 60	75. 21	76. 58	79. 41	82. 38	85. 51	88. 78
22 0	12. 61	12. 33	12. 04	11. 77	11. 48	+11. 20	75. 20	76. 56	79. 40	82. 36	85. 49	88. 76
22 30	15. 01	14. 76	14. 50	14. 25	14. 00	. . . . .	75. 40	76. 77	79. 62	82. 58	85. 72	89. 00
23 0	+17. 27	+17. 06	+16. 83	+16. 61	+16. 40	. . . . .	75. 65	77. 02	79. 87	82. 85	86. 00	89. 29

1894 OCTOBER 13. ZONE 70. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8. 3	14. 7	16. 5	18. 5	20. 4	22. 6	a	33 48. 27	55 58 10. 0	6. 4	I	47. 400	19 33 27. 43	—17 8 14. 66	—17 5699[1]
2	8. 0	59. 2	1. 2	3. 0	4. 9	7. 1	a	34 32. 54	54 14 9. 6	4. 6	I	46. 075	19 34 11. 50	15 23 43. 46	15 5420
3	. . . . . .	30. 7	32. 9	35. 1	37. 3	39. 5	(c)	34 35. 11	53 56 9. 2	3. 5	V	42. 700	19 34 14. 03	15 4 41. 16	15 5421
4	8. 8	19. 2	21. 5	23. 4	25. 2	27. 2	e	34 53. 50	55 58 10. 0	5. 7	VII	41. 440	19 34 32. 64	17 6 25. 32	17 5706
5	9. 2	27. 5	29. 5	31. 7	33. 9	36. 0	c	59 31. 73	55 26 10. 0	6. 5	V	44. 200	19 59 10. 52	16 35 5. 89	16 5496
6	9. 1	56. 8	58. 6	0. 7	2. 5	4. 7	a	8 30. 00	53 20 10. 0	5. 7	I	47. 170	20 8 8. 47	14 29 49. 96	14 5674
7	8. 8	50. 0	52. 1	54. 3	56. 6	58. 7	c	8 54. 35	55 14 10. 0	5. 5	III B	41. 015	20 8 33. 00	16 18 46. 85	16 5535
8	9. 0	43. 2	45. 3	47. 6	49. 8	52. 0	c	9 47. 59	55 14 "	"	III A	42. 675	20 9 26. 24	16 25 43. 54	16 5540
9	8. 7	33. 9	35. 4	37. 4	39. 5	41. 7	a	13 7. 01	54 0 10. 0	5. 5	I	46. 020	20 12 45. 50	15 9 27. 95	15 5613
10	8. 3	34. 9	37. 1	39. 2	41. 4	43. 5	c	13 39. 23	55 0 10. 0	6. 2	III	47. 815	20 13 17. 81	—16 10 6. 66	—16 5558
11	8. 1	9. 3	11. 1	13. 1	15. 1	17. 3	a	15 42. 69	54 36 10. 0	5. 2	I	43. 360	20 15 21. 20	—15 44 37. 76	—15 5628
12	8. 7	57. 0	59. 3	1. 6	3. 7	5. 7	c	16 1. 47	53 42 10. 0	5. 5	V B	42. 590	20 15 39. 89	14 47 11. 97	14 5720
13	9. 0	16. 7	18. 7	21. 0	23. 2	25. 5	c	17 21. 03	53 42 "	"	III A	48. 560	20 16 59. 45	14 55 28. 94	15 5640
14	8. 2	31. 1	32. 9	34. 9	36. 8	39. 1	a	21 4. 26	53 2 10. 0	5. 0	I	45. 910	20 20 42. 56	14 11 20. 50	14 5741
15	8. 9	31. 4	33. 3	35. 1	37. 2	39. 3	a	22 4. 51	52 40 10. 0	5. 3	I	43. 805	20 21 42. 77	13 48 39. 39	13 5672
16	7. 8	16. 6	18. 4	20. 3	22. 4	24. 5	a	25 49. 90	54 14 10. 0	5. 2	I	46. 060	20 25 28. 26	—15 23 24. 80	—15 5696

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
17	9.0	54.2	55.9	57.9	59.8	2.0	a	26 27.41	54 14 10.0	5.2	I B	46.090	20 26 5.76	−15 20 12.93	−15 5698
18	9.1	12.9	14.6	16.6	18.6	21.7	a	27 46.15	54 14 "	"	I A	41.050	20 27 24.49	15 25 1.99	15 5706
19	9.2	59.7	1.8	4.0	6.0	8.2	c	29 3.95	53 52 10.0	5.4	III B	42.660	20 28 42.23	14 57 7.70	15 5714
20	9.1	41.0	43.2	45.4	47.6	49.7	c	29 45.39	53 52 "	"	V A	46.610	20 29 23.67	−15 4 49.53	−15 5718
21	5.5	29.4	31.3	33.1	35.1	37.3	a	34 2.69	54 8 9.5	4.5	I	49.110	20 33 40.94	−15 18 19.30	−15 5743
22	9.6	24.2	26.7	28.7	30.9	33.1	c	34 28.73	55 26 10.0	6.0	V	46.530	20 34 7.09	16 35 37.93	16 5661
23	9.1	3.4	5.2	7.2	9.0	11.1	a	42 36.83	55 32 10.4	6.7	I B	44.435	20 42 15.09	16 37 40.61	16 5698
24	8.1	18.7	20.5	22.4	24.5	26.6	a	42 52.20	55 32 "	"	III A	40.445	20 42 30.47	16 42 51.74	16 5702
25	8.5	45.5	47.2	49.1	51.0	53.3	a	44 18.55	53 14 10.0	4.0	III	43.405	20 43 56.59	14 22 27.08	14 5859
26	9.2	6.1	7.9	9.8	11.8	13.9	a	45 39.40	54 30 10.0	5.0	I	47.480	20 45 17.54	−15 39 46.07	−15 5812

Reduction Elements. Zone 70.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 13.3....	+0.058	−0.092	−0.358	+0.022	−0.074	−0.358
13.4....	−0.014	−0.056				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	h Sagittarii		*f* Sagittarii		51 Aquilae		63 Sagittarii		Mayer 909		Mayer 911	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	63 56 7.85		58 50 8.05		49 52 7.70		52 46 7.35		60 30 7.55		57 14 7.65	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......		5 48.13	46.580	6 2.94	44.605	5 25.48	43.950	5 12.89	46.855	6 9.21	45.565	5 45.85
II Red. to Mer......		1.55	.580	1.60	.565	1.70	.920	1.67	.850	1.56		1.55
VI Inclination	45.710	2.04	.375		.415		.735			−0.54		−2.44
VII Refraction	.660	1 55.5	.320	1 33.6	.390	1 7.3	.725	1 14.6	.675	1 41.0		1 28.9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINTS.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
λ Ursae Minoris	19 28 32.20	4	+13.98	[−38.53]	309 58	....
h Sagittarii	19 30 57.11	8	− 0.37	−38.42	64 3 55.1	49.2
f Sagittarii	19 40 52.41	11	− 0.34	−38.51	58 57 46.2	48.1
51 Aquilae..........	19 45 38.31	11	− 0.31	−38.48	49 58 42.2	48.3
63 Sagittarii	19 56 44.03	11	− 0.32	−38.60	52 52 36.5	48.6
16 Aquarii...........	21 16 12.73	8	− 0.28	−38.59	43 54	....
Mayer 909	21 53 31.68	10	− 0.35	−38.68	60 37 58.8	49.0
Mayer 911	21 57 4.23	5	− 0.34	−38.61	57 21 21.5	48.3

h			s
19.728	..........*dt*....................		−38.502
	Hourly rate		− 0.0633
			° ′ ″
	Adopted Equator Point...........		38 56 48.58

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 27	29.555	58.0	56.9
20 22	29.545	56.6	55.3
21 59	29.575	53.0	52.0

Note.
16 Aquarii, Mayer 909, Mayer 911. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.314	19 30	......	......	+17.764	+17.881	+18.001	+18.118
53	0.318	20 0	+17.253	+17.358	17.463	17.571	17.680	+17.789
54	0.322	20 30	+16.952	17.046	17.140	17.237	17.332	......
55	0.326	21 0	......	+16.718	+16.799	+16.882	+16.964	......
56	0.330							
57	−0.335							

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894.0						*R*				
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′
h m	″	″	″	″	″	″	″	″	″	″	″
19 30	....	....	−0.63	−0.98	−1.34	−1.69	73.59	76.30	79.12	82.11	85.23
20 0	+2.48	+2.14	+1.77	+1.42	+1.07	+0.72	73.71	76.42	79.25	82.24	85.37
20 30	+4.95	4.61	4.27	3.93	3.58	....	73.84	76.56	79.40	82.39	85.53
21 0	....	+7.13	+6.81	+6.47	+6.14	....	74.01	76.74	79.58	82.58	85.72

1894 OCTOBER 15. ZONE 71. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.7	2.8	4.6	6.6	8.6	10.8	a	8 36.55	56 50 10.0 7.2	I 42.850	20 8 15.39	−17 58 39.27	−18 5624
2	8.6	28.5	30.1	34.4	36.5	38.7	$b_2 c_3$	8 38.68	55 50 10.0 7.6	III 41.310	20 8 17.42	16 58 9.05	17 5906
3	8.8	55.6	57.7	59.9	2.0	4.2	c	8 59.89	55 50 " "	V B 40.385	20 8 38.62	16 54 40.56	17 5909
4	8.5	29.1	31.1	33.1	35.4	37.8	c	9 33.31	55 50 " "	V A 47.120	20 9 12.04	17 3 13.92	17 5910
5	8.6	1.8	3.5	5.5	7.4	9.6	a	15 35.29	55 56 10.0 6.6	I A 45.730	20 15 13.96	17 8 41.89	17 5947
6	8.7	35.8	38.0	40.1	42.1	44.3	(c)	15 40.07	55 56 " "	III B 40.690	20 15 18.72	17 0 42.22	17 5949
7	8.8	18.8	20.6	22.7	24.7	26.9	a	16 52.45	55 56 " "	I B 46.850	20 16 31.10	17 5 49.54	17 5954
8	9.1	10.4	12.2	14.2	16.2	18.4	a	20 43.80	54 34 10.0 6.3	I A 42.005	20 20 22.28	15 45 25.29	15 5660
9	9.2	51.3	53.3	55.1	57.0	59.2	a	21 24.68	54 34 " "	I B 42.350	20 21 3.14	15 39 6.15	15 5669
10	8.4	35.0	37.7	39.2	43.5	45.7	$b_1 c_2$	21 47.84	56 16 10.0 7.5	II 46.195	20 21 26.46	−17 25 37.74	−17 5979
11	9.1	1.4	3.4	5.7	8.0	10.0	c	22 5.71	56 16 " "	V B 50.205	20 21 44.33	−17 23 44.08	−17 5982
12	8.4	47.8	49.6	51.5	53.7	55.8	a	25 21.37	55 42 10.0 8.0	III A 40.600	20 24 59.90	16 53 2.64	17 6003
13	9.1	18.0	19.7	21.7	23.7	25.8	a	25 51.45	55 42 " "	III B 40.605	20 25 29.97	16 46 37.14	16 5621
14	8.1	39.8	41.5	43.5	45.5	47.8	a	27 13.32	55 48 10.0 7.9	I 43.960	20 26 51.84	16 56 51.27	17 6014
15	9.1	33.3	35.1	37.1	38.9	41.1	a	29 6.62	54 38 10.0 6.4	I B 44.480	20 28 45.00	15 43 44.32	15 5715
16	8.6	58.1	59.7	3.9	6.0	8.1	$b_2 c_3$	29 8.17	54 38 " "	III (A) 44.115	20 28 46.56	15 50 4.52	15 5716
17	8.9	18.1	20.5	24.8	26.3	29.1	$c_4 d_3$	29 16.15	56 6 10.0 8.0	VI 45.580	20 28 54.67	17 15 26.54	17 6021
18	9.4	0.6	2.8	5.0	7.0	9.2	c	32 4.93	56 6 " "	III B 45.070	20 31 43.42	17 12 1.21	....
19	8.0	12.9	14.8	16.8	18.7	20.9	a	33 46.51	55 44 10.0 6.2	I A 39.475	20 33 24.94	16 54 35.94	17 6046
20	9.0	45.6	47.7	50.0	52.1	54.4	c	33 49.97	55 44 " "	III B 39.900	20 33 28.40	−16 48 20.29	−16 5658
21	7.5	56.4	58.5	0.7	2.9	5.1	c	36 0.73	56 34 10.0 7.0	III 47.570	20 35 39.21	−17 44 0.72	−17 6059
22	9.0	8.0	10.0	12.0	13.9	16.0	a	42 41.66	55 42 10.0 6.8	I 41.630	20 42 19.98	16 50 1.11	17 6086
23	6.8	23.7	25.6	27.6	29.6	31.9	a	42 57.37	55 42 " "	I A 41.730	20 42 35.68	16 53 16.14	17 6089
24	8.9	18.6	20.4	22.2	24.4	26.5	a	43 51.81	53 42 10.0 6.5	I 45.890	20 43 29.94	14 51 16.28	15 5800
25	9.1	46.9	48.5	52.6	54.9	56.9	$b_2 c_3$	43 56.95	53 42 " "	III A 46.190	20 43 35.09	14 54 36.87	15 5802
26	7.6	53.1	55.0	57.0	58.9	1.0	a	52 26.61	55 16 10.0 6.0	I 44.930	20 52 4.78	16 24 59.35	16 5741
27	8.9	47.8	49.4	53.5	55.6	57.9	$b_2 c_3$	52 57.88	55 56 10.0 5.9	III 44.035	20 52 36.10	17 4 45.83	17 6135
28	8.9	32.7	34.3	38.6	40.5	42.8	$b_2 c_3$	53 42.80	54 56 10.0 6.2	III (A) 38.265	20 53 20.93	16 6 6.20	16 5753
29	8.9	44.2	46.3	48.5	52.7	54.3	$c_3 d_2$	53 44.20	54 56 " "	VI B 42.180	20 53 22.32	16 0 57.57	16 5754
30	6.8	25.7	27.3	31.6	33.7	35.9	$b_2 c_3$	55 35.90	56 42 10.0 7.2	III A 47.960	20 55 14.15	−17 55 15.80	−18 5831
31	8.9	11.9	13.9	16.2	18.2	20.4	c	56 16.13	56 6 10.0 7.0	V 44.070	20 55 54.31	−17 14 48.22	−17 6154
32	9.0	7.7	9.9	12.1	14.5	16.5	c	57 12.15	56 48 10.0 8.3	V A 42.980	20 56 50.38	17 59 42.90	18 5840
33	7.0	0.2	2.1	4.3	6.6	8.8	c	58 4.41	56 48 " "	III B 38.390	20 57 42.62	17 51 48.32	18 5844
34	8.8	32.4	34.3	36.2	38.1	40.4	a	59 6.14	56 48 " "	I 40.720	20 58 44.34	17 55 42.87	18 5851
35	.....	37.1	39.2	41.4	43.6	45.8	c	0 41.43	56 28 10.0 7.0	III 47.360	21 0 19.59	17 37 48.98	17 6174
36	8.9	32.5	34.6	36.8	38.9	41.0	c	1 36.77	54 50 10.0 5.5	III 43.170	21 1 14.79	15 58 23.56	16 5792
37	8.6	13.0	14.9	16.9	18.9	21.0	a	2 46.50	54 50 " "	I A 43.150	21 2 24.51	16 1 34.25	16 5800
38	9.0	54.5	56.3	58.3	0.3	2.4	a	3 28.18	56 32 10.0 8.0	I 45.395	21 3 6.31	17 41 9.70	17 6191
39	9.1	8.9	10.8	12.7	14.6	16.9	a	4 42.59	56 30 10.0 8.4	I 47.830	21 4 20.70	17 39 55.81	17 6195
40	8.8	55.7	57.6	59.6	1.5	3.7	a	5 29.47	56 44 10.0 7.5	I 44.560	21 5 7.59	−17 52 53.60	−18 5878
41	9.1	28.5	30.4	32.2	34.2	36.5	a	6 2.04	55 40 10.0 7.1	III 42.045	21 5 40.06	−16 48 4.09	−16 5815
42	9.0	47.9	49.8	51.7	53.7	56.0	a	7 21.59	56 16 10.0 7.0	I 46.020	21 6 59.64	17 25 19.25	17 6203
43	8.8	37.4	39.7	41.9	44.0	46.1	c	7 41.83	56 26 10.0 7.2	III 45.990	21 7 19.89	17 35 21.01	17 6206
44	8.9	21.7	23.6	25.4	27.5	29.7	a	8 55.40	56 32 10.0 7.6	I 45.150	21 8 33.45	17 41 3.35	17 6213
45	......	58.6	0.3	2.3	4.1	6.5	a	9 32.17	56 32 " "	I B 45.470	21 9 10.21	17 37 57.00	17 6214
46	6.0	19.1	20.9	23.0	25.1	27.2	a	9 52.89	56 32 " "	I A 49.160	21 9 30.94	17 45 32.67	17 6216
47	8.9	56.6	58.9	1.1	3.3	5.4	c	10 1.07	55 0 10.0 7.1	V 45.340	21 9 39.00	16 9 5.48	16 5824
48	8.9	10.3	12.0	14.0	16.0	18.1	a	11 43.48	53 44 10.0 5.5	III 47.445	21 11 21.29	14 53 39.29	15 5940
49	9.0	16.5	18.6	20.8	22.9	25.0	c	12 20.77	53 16 10.0 5.6	III 46.790	21 11 58.54	14 25 25.53	14 5984
50	8.9	0.8	2.6	4.5	6.5	8.6	a	13 33.93	53 16 " "	I 47.850	21 13 11.69	−14 25 43.57	−14 5991
51	6.5	59.5	1.6	3.8	6.0	8.1	c	14 3.81	55 28 10.0 7.2	III 41.820	21 13 41.73	−16 35 57.15	−16 5840
52	8.7	54.8	57.0	59.2	1.4	3.6	c	14 59.21	55 44 10.0 6.9	III 47.020	21 14 37.12	16 53 36.52	17 6238
53	8.0	4.2	6.0	8.1	10.0	12.3	a	16 37.73	55 14 10.0 6.0	I 48.910	21 16 15.60	16 24 8.39	16 5849
54	9.3	49.5	51.7	53.8	56.0	58.0	c	16 53.81	55 0 10.0 7.0	V 43.010	21 16 31.65	16 8 19.33	16 5852
55	8.0	21.9	23.7	25.6	27.5	29.6	a	22 54.95	53 2 10.0 5.8	I B 45.900	21 22 32.58	14 7 51.37	14 6031
56	8.2	25.3	27.1	29.2	31.0	33.3	a	23 58.49	53 2 " "	I A 45.075	21 23 36.12	14 14 0.86	14 6038
57	9.3	14.7	16.5	18.4	20.4	22.6	a	24 47.88	53 32 10.0 6.7	III 41.360	21 24 25.52	14 39 40.28	14 6042
58	6.0	0.9	2.7	4.5	6.6	8.8	a	25 34.08	53 32 " "	III A 44.030	21 25 11.72	14 43 44.01	14 6047
59	7.7	56.5	58.1	0.2	2.1	4.3	a	28 29.50	52 44 10.0 5.3	I 47.630	21 28 7.05	13 53 34.18	14 6063
60	8.7	5.3	7.0	9.1	10.9	13.1	a	29 38.41	53 14 10.0 5.0	I B 49.600	21 29 15.97	−14 21 0.32	−14 6072
61	8.9	32.5	34.2	36.2	38.0	40.2	a	31 5.14	53 14 " "	I B 43.040	21 30 42.68	−14 18 55.13	−14 6077
62	8.8	46.2	48.1	49.9	51.9	54.1	a	31 19.37	53 14 " "	III A 43.660	21 30 56.92	14 25 34.00	14 6078
63	8.8	25.4	26.9	28.8	30.8	33.0	a	31 58.30	53 14 " "	III B (38).775	21 31 35.83	14 17 35.47	14 6081
64	8.8	54.4	56.4	58.6	0.6	3.0	c	31 58.61	53 14 " "	V (A) 43.440	21 31 36.15	14 25 31.16	14 6082
65	......	41.8	44.0	46.1	48.3	50.5	c	32 46.15	56 30 10.0 6.6	V 46.730	21 32 23.89	17 39 30.44	17 6329
66	8.1	50.0	52.1	54.2	56.1	58.0	e	33 24.25	56 10 10.0 7.0	V 44.460	21 33 1.96	17 18 46.32	17 6333
67	......	51.1	53.1	55.5	57.6	59.7	c	34 55.41	56 2 10.0 6.6	V B 42.275	21 34 33.08	−17 6 51.29	−17 6340

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
68	8.9	23.1	25.2	27.5	29.7	32.0	c	35 27.51	56	2	10.0	6.6	V A	42.205	21 35 5.18	−17 13 15.34	−17 6343
69	7.9	13.8	15.6	17.6	19.6	21.8	a	36 47.50	56	32	10.0	7.1	III	44.330	21 36 25.19	17 40 42.60	17 6349
70	9.3	......	......	......	......	......	......	....	55	52	10.0	6.7	III	44.820	21 37 4	−17 0 49.62	−17 6354
71	9.1	5.1	7.0	9.0	10.9	13.0	a	39 38.53	54	40	10.0	6.1	I	48.335	21 39 16.07	−15 49 50.51	−16 5936
72	8.9	31.3	33.1	35.0	37.0	39.1	a	41 4.50	53	46	10.0	6.2	I	43.290	21 40 41.96	14 54 11.89	15 6061
73	8.0	32.4	34.1	36.2	38.0	40.3	a	42 5.60	53	46	“	“	I A	47.000	21 41 43.06	14 58 35.48	15 6065
74	7.6	16.7	18.8	21.0	23.3	25.4	c	42 21.05	56	4	10.0	8.0	V	46.720	21 41 58.63	17 13 27.62	17 6371
75	6.2	31.9	33.8	35.7	37.7	39.9	a	45 5.56	56	10	10.0	7.0	III	44.380	21 44 43.11	17 18 40.67	17 6389
76	8.8	54.4	56.3	58.1	0.2	2.4	a	47 27.95	55	36	10.0	6.0	I	41.430	21 47 5.45	16 43 40.07	16 5961
77	9.0	2.5	4.4	6.3	8.2	10.4	a	48 36.06	55	50	10.0	6.1	I	46.440	21 48 13.56	16 59 15.94	17 6399
78	8.0	51.4	53.5	55.7	57.8	59.9	c	48 55.67	56	30	10.0	7.3	III	42.115	21 48 33.19	17 37 57.95	17 6401
79	9.0	28.9	30.7	32.6	34.7	36.8	a	52 2.36	55	18	10.0	7.4	I	43.090	21 51 39.78	16 26 10.63	16 5979
80	9.0	37.1	38.9	40.9	42.8	45.1	a	54 10.53	54	58	10.0	5.5	I	48.010	21 53 47.91	−16 7 41.98	−16 5987
81	7.8	2.7	4.3	6.4	8.3	10.6	a	55 35.82	53	30	10.0	5.2	I	44.900	21 55 13.10	−14 38 38.45	−14 6187
82	8.8	33.9	35.6	37.6	39.6	41.7	a	56 7.04	53	30	“	“	III A (39)	.665	21 55 44.31	14 40 13.61	14 6190
83	8.7	29.8	31.7	33.7	35.6	37.8	a	8 3.45	55	58	10.0	6.0	III	45.550	22 7 40.68	17 6 57.71	17 6463
84	8.8	47.6	49.4	51.2	53.4	55.6	a	9 21.16	55	58	“	“	I	43.430	22 8 58.38	17 6 15.33	17 6468
85	8.9	28.8	30.6	32.6	34.4	36.7	a	11 2.24	55	20	10.0	5.3	I	45.050	22 10 39.42	16 28 43.71	16 6050
86	8.3	46.8	48.6	50.5	52.5	54.7	a	12 20.25	55	20	“	“	I A	46.035	22 11 57.41	16 32 15.49	16 6056
87	6.2	20.8	22.9	25.1	27.4	29.6	c	12 25.17	55	20	“	“	III	45.010	22 12 2.33	16 28 44.56	16 6057
88	9.0	11.7	14.0	16.0	17.9	19.8	e	12 46.19	55	20	“	“	V B	46.215	22 12 23.34	16 25 56.68	16 6058
89	8.9	51.9	54.0	56.1	58.2	0.5	c	13 56.15	55	42	10.0	6.0	V	48.160	22 13 33.30	16 51 47.35	17 6487
90	8.8	57.9	59.4	3.5	5.7	7.8	b_2 c_3	15 7.88	54	40	10.0	5.7	III B	50.140	22 14 44.97	−15 47 7.79	−16 6065
91	8.5	55.8	58.0	59.9	1.8	3.6	e	15 30.33	53	56	10.0	6.0	VII B	50.975	22 15 7.38	−15 3 24.74	−15 6196
92	8.0	4.0	5.8	7.8	9.7	11.9	a	18 37.40	54	52	10.0	6.5	III A	49.570	22 18 14.45	16 5 22.81	16 6076
93	8.8	44.2	46.0	48.0	49.8	52.0	a	19 17.55	54	52	“	“	III B	39.970	22 18 54.59	15 55 54.57	16 6077
94	7.7	57.6	59.4	1.5	3.4	5.7	a	21 31.27	56	4	10.0	7.3	I A	41.915	22 21 8.32	17 14 58.89	17 6520
95	7.7	27.4	29.6	31.7	33.9	36.0	c	21 31.73	56	4	“	“	III A	42.080	22 21 8.78	17 15 3.74	17 6521
96	9.1	20.1	22.6	24.5	26.3	28.4	e	21 54.58	56	4	“	“	VII B	40.250	22 21 31.62	17 8 6.33	17 6525
97	8.9	59.4	1.3	3.2	5.1	7.4	a	24 33.04	56	10	10.0	8.0	I	46.390	22 24 10.05	17 19 11.10	17 6530
98	9.0	29.4	32.0	33.7	38.0	40.1	b_1 c_2	24 42.25	56	10	“	“	II	46.040	22 24 19.26	17 19 5.35	17 6532
99	8.8	7.5	9.4	11.3	13.3	15.4	a	25 40.89	54	32	10.0	6.5	I	41.515	22 25 17.83	15 39 32.67	15 6233
100	8.4	30.1	32.1	34.2	36.3	38.6	c	27 34.27	54	20	10.0	6.6	III B	46.300	22 27 11.18	−15 25 52.56	−15 6240
101	9.1	40.5	42.7	44.7	49.1	50.5	c_3 d_2	27 40.51	54	20	“	“	VII A	43.825	22 27 17.42	−15 31 33.67	−15 6241
102	8.9	19.1	20.7	25.1	27.0	29.3	b_2 c_3	29 29.28	55	50	10.0	6.6	III	42.870	22 29 6.22	16 58 3.62	17 6549
103	8.7	53.7	55.5	57.4	59.3	1.6	a	30 27.33	56	38	10.0	7.0	III	43.920	22 30 4.28	17 46 26.10	18 6151
104	8.5	10.3	12.1	14.0	16.0	18.3	a	31 43.90	56	10	10.0	7.2	I	47.100	22 31 20.82	17 19 23.34	17 6560
105	9.1	57.5	59.4	1.4	3.4	5.6	a	32 31.23	56	10	“	“	I A	41.860	22 32 8.14	17 20 56.74	17 6563
106	8.8	59.9	1.6	3.6	5.5	7.8	a	33 33.03	53	26	10.0	7.2	I	45.380	22 33 9.84	14 34 42.72	14 6319
107	7.8	27.8	29.4	33.5	35.7	37.7	b_2 c_3	33 37.80	53	26	“	“	III	47.010	22 33 14.61	14 35 15.53	14 6320
108	8.8	38.1	40.2	42.4	46.6	48.1	c_3 d_2	33 38.11	53	26	“	“	VI	40.870	22 33 14.92	[14 33 21.04]	14 6321
109	8.9	48.7	50.6	52.5	54.6	56.7	a	40 22.21	55	2	10.0	7.2	I A	47.810	22 39 58.99	16 14 45.83	16 6147
110	7.0	26.8	28.9	31.1	33.3	35.4	c	40 31.11	55	2	“	“	III B	41.845	22 40 7.88	−16 6 28.56	−16 6149
111	9.2	58.1	0.2	2.4	4.5	6.7	c	41 2.39	55	2	“	“	III B	43.140	22 40 39.16	−16 6 53.14	−16 6150
112	7.6	47.6	49.4	51.4	53.5	55.5	a	42 21.14	55	32	10.0	8.2	III	43.650	22 41 57.91	16 40 17.01	16 6152
113	9.0	5.7	7.7	10.0	12.1	14.2	c	43 9.95	55	8	10.0	6.6	III	42.020	22 42 46.70	16 15 43.94	16 6155
114	9.0	39.7	41.6	43.5	45.5	47.7	a	44 13.18	55	8	“	“	III B	43.490	22 43 49.91	16 12 59.50	16 6158
115	9.1	56.6	58.5	0.5	2.5	4.6	a	46 30.20	55	30	10.0	7.2	I A	40.670	22 46 6.91	16 40 30.74	16 6162
116	9.0	59.6	1.3	3.2	5.1	7.5	a	47 32.98	55	30	“	“	I B	40.090	22 47 9.68	16 33 54.11	16 6165^1
117	9.0	24.0	25.5	29.7	31.9	......	b_2 c_2	47 34.06	55	30	“	“	III B	39.230	22 47 10.76	16 33 39.49	16 6165^2
118	8.4	18.3	20.6	22.8	27.1	28.7	c_3 d_2	48 18.46	56	36	10.0	8.4	V B	45.690	22 47 55.16	17 41 47.88	17 6616
119	8.6	54.7	56.6	58.9	3.2	4.8	c_3 d_2	48 54.59	56	36	“	“	V A	46.760	22 48 31.29	17 48 33.61	18 6212
120	8.8	44.6	46.5	48.5	50.4	52.7	a	50 18.38	56	36	“	“	III A	40.630	22 49 55.06	−17 46 35.29	−18 6217
121	8.9	58.5	0.3	2.3	4.3	6.5	a	52 32.16	56	22	10.0	7.3	I	41.510	22 52 8.80	−17 29 35.64	−17 6628
122	9.0	41.0	43.0	45.1	47.4	49.6	c	52 45.23	56	30	10.0	7.6	III	43.550	22 52 21.87	17 38 16.87	17 6631
123	7.8	43.0	44.9	46.8	48.9	51.0	a	54 16.74	56	30	“	“	I A	44.460	22 53 53.37	17 41 45.48	17 6638
124	9.2	1.0	2.9	4.8	6.7	8.9	a	56 34.38	54	42	10.0	6.6	I B	36.700	22 56 10.95	15 44 46.32	15 6326
125	8.9	33.5	35.7	37.8	40.1	42.2	c	56 37.87	54	42	“	“	III A	47.080	22 56 14.44	15 54 31.07	16 6193
126	9.1	56.1	58.4	0.3	2.1	4.0	e	1 30.80	53	8	10.0	6.4	VII B	41.290	23 1 7.28	14 12 13.77	14 6406
127	8.0	15.3	17.0	21.1	23.3	25.5	b_2 c_3	3 25.49	56	10	10.0	7.6	III	40.870	23 3 1.99	17 17 24.17	17 6682
128	8.7	37.8	39.7	41.7	43.7	45.9	a	5 11.43	55	36	10.0	6.0	I	42.390	23 4 47.91	16 43 48.70	16 6224
129	9.0	13.5	15.5	17.7	20.0	22.0	c	5 17.75	55	36	“	“	III B	46.460	23 4 54.22	16 41 55.67	16 6225
130	8.7	58.9	0.6	2.5	4.7	6.8	a	6 32.38	55	36	“	“	I A	43.900	23 6 8.84	−16 47 30.59	17 6692
131	8.7	19.7	21.6	23.6	25.6	27.8	a	6 53.32	55	36	“	“	III B	48.060	23 6 29.78	−16 42 26.04	−16 6236
132	9.0	36.6	38.5	40.4	42.4	44.6	a	8 10.18	55	40	10.0	7.1	I	43.350	23 7 46.62	16 48 7.57	17 6700
133	9.1	19.6	21.5	23.6	25.5	27.8	a	8 53.27	55	40	“	“	I B	42.530	23 8 29.70	16 44 39.68	16 6240
134	9.1	50.3	52.6	54.6	57.0	59.1	c	8 54.73	55	40	“	“	V A	45.840	23 8 31.16	16 52 11.40	17 6704
135	7.2	56.6	58.8	1.0	3.2	5.3	c	10 0.99	55	40	“	“	III B	49.770	23 9 37.40	16 46 59.22	17 6710
136	8.9	43.5	45.6	47.8	50.0	52.1	c	10 47.81	56	18	10.0	7.2	V B	50.525	23 10 24.21	17 25 17.09	17 6715
137	8.0	53.9	56.0	58.1	0.4	2.5	c	11 58.19	56	40	10.0	8.5	V	48.000	23 11 34.58	17 49 43.18	18 6279
138	8.9	5.8	7.9	10.1	12.3	14.5	c	13 10.13	55	46	10.0	6.6	III	41.520	23 12 46.50	16 53 34.44	17 6719
139	8.9	5.9	7.8	9.8	11.7	13.9	a	14 39.28	54	12	10.0	4.6	I	43.920	23 14 15.62	15 20 12.77	15 6395
140	9.0	54.6	56.7	59.0	1.3	3.4	c	14 59.01	56	6	10.0	7.4	V	47.920	23 14 35.36	−17 15 39.27	−17 6728

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
141	9.1	30.8	33.2	35.1	37.0	39.0	e	15 5.21	56 6 10.0 7.4	VII B	43.210	23 14 41.56	−17 10 58.58	−17 6730
142	8.0	35.9	38.0	40.3	42.3	44.5	c	16 40.21	56 18 10.0 8.3	V	40.770	23 16 16.54	17 25 24.17	17 6734
143	9.1	53.1	55.5	57.4	59.3	1.1	e	17 27.39	56 34 10.0 8.1	V B	41.350	23 17 3.71	17 38 23.53	17 6739
144	9.0	23.7	26.2	28.1	30.0	32.0	e	17 58.10	56 34 " "	VII A	37.330	23 17 34.41	17 43 33.70	17 6741
145	9.0	22.8	25.1	26.8	28.8	30.8	e	18 57.17	55 16 10.0 8.0	VII A	35.960	23 18 33.47	16 25 3.61	16 6276
146	8.8	13.0	15.4	17.3	19.1	21.3	e	19 47.62	54 42 10.0 6.8	VII	44.510	23 19 23.91	15 50 31.26	16 6282
147	8.7	43.8	45.7	47.6	49.6	51.9	a	21 17.24	54 42 " "	III B	41.825	23 20 53.51	15 46 24.72	16 6286
148	6.6	34.1	36.0	37.9	39.8	42.0	a	22 7.49	54 42 " "	I B	46.440	23 21 43.75	15 47 50.83	16 6291
149	6.5	33.8	35.5	37.5	39.5	41.6	a	23 7.12	54 42 " "	I	46.110	23 22 43.37	15 50 56.78	16 6293
150	9.0	22.8	24.7	26.6	28.5	30.7	a	23 56.19	54 42 " "	I B	44.520	23 23 32.43	−15 47 14.23	−16 6296
151	9.1	13.9	15.8	17.7	19.9	21.9	a	24 47.60	56 10 10.0 8.2	I	42.340	23 24 23.82	−17 17 50.03	−17 6759
152	7.9	31.3	33.1	35.1	37.0	39.3	a	26 4.79	55 24 10.0 6.1	I	42.980	23 25 41.00	16 31 58.85	16 6303
153	8.5	34.2	35.9	38.0	39.8	42.0	a	27 7.46	54 24 10.0 6.3	I B	44.750	23 26 43.66	15 29 17.50	15 6446
154	9.1	49.0	50.8	52.7	54.6	56.9	a	28 22.29	54 24 " "	I	43.480	23 27 58.48	15 32 5.58	15 6451
155	9.3	41.0	42.9	44.8	46.8	49.0	a	29 14.39	54 24 " "	I A	44.460	23 28 50.56	15 35 37.45	15 6454
156	8.6	30.3	32.6	34.7	36.9	39.0	c	33 34.71	54 2 10.0 5.8	V	42.325	23 33 10.84	15 9 45.80	15 6465
157	8.9	52.2	54.2	56.4	58.6	0.8	c	34 56.45	56 28 10.0 6.8	III	41.650	23 34 32.54	17 35 39.01	17 6788
158	9.0	33.2	35.1	37.5	39.6	41.8	c	39 37.45	54 24 10.0 5.3	III	44.020	23 39 13.51	15 32 17.30	15 6485
159	9.1	18.8	21.0	23.1	25.4	27.6	c	40 23.19	55 56 10.0 7.5	V	42.140	23 39 59.22	17 3 48.78	17 6810
160	8.6	14.0	16.0	18.2	20.5	22.5	c	41 18.25	56 32 10.0 7.3	V	47.220	23 40 54.26	−17 41 27.28	−17 6814
161	9.0	16.8	18.9	21.1	23.3	25.4	c	42 21.11	56 32 " "	III B	50.600	23 41 57.11	− 17 39 17.70	−17 6816
162	7.9	50.6	52.3	54.3	56.3	58.5	a	43 24.15	56 6 10.0 7.8	III	46.550	23 43 0.14	17 15 11.86	17 6819
163	9.0	51.4	53.4	55.6	57.8	0.0	c	43 55.65	55 42 10.0 6.6	V B	51.390	23 43 31.64	16 49 31.42	17 6822
164	8.5	17.4	19.5	21.7	23.8	25.9	c	44 21.67	55 42 " "	V (B)	49.900	23 43 57.66	16 49 2.94	17 6825
165	9.0	22.0	24.1	26.3	28.4	30.7	c	45 26.31	56 48 10.0 8.8	V B	52.280	23 45 2.27	17 55 52.93	18 6378
166	8.5	30.0	32.3	34.1	36.1	38.0	e	46 4.36	55 32 10.0 6.8	VII	45.220	23 45 40.33	16 40 47.48	16 6376
167	8.5	24.6	26.7	28.9	31.0	33.0	c	47 28.85	55 50 10.0 6.7	V	40.540	23 47 4.80	16 57 17.86	17 6834
168	8.2	52.2	54.2	56.4	58.6	0.9	c	47 56.47	55 50 " "	V (B)	46.070	23 47 32.42	16 55 50.76	17 6836
169	9.0	38.1	40.4	42.5	44.3	46.3	e	48 12.53	55 50 " "	VII A	45.650	23 47 48.46	17 2 9.47	17 6838
170	8.7	30.5	32.5	34.8	36.9	39.1	c	49 34.77	55 4 10.0 7.4	V	41.830	23 49 10.70	−16 11 40.56	−16 6385
171	8.9	41.4	43.4	45.7	47.8	50.0	c	50 45.67	54 16 10.0 6.2	III	43.440	23 50 21.60	−15 24 6.74	−15 6521
172	9.1	22.6	24.4	26.3	28.3	30.6	a	51 56.25	56 28 10.0 6.6	III	45.580	23 51 32.13	17 36 54.29	17 6848
173	9.2	38.6	40.4	42.4	44.4	46.5	a	53 12.26	56 28 " "	I B	48.015	23 52 48.12	17 34 26.59	17 6850
174	9.2	37.8	40.0	42.0	44.3	46.6	c	53 42.15	56 38 10.0 7.2	III	45.850	23 53 18.00	17 47 0.35	18 6405
175	8.7	31.5	33.6	35.9	38.0	40.1	c	54 35.83	56 22 10.0 8.0	III	42.690	23 54 11.68	17 29 59.81	17 6856
176	7.8	37.8	39.9	42.1	44.2	46.4	c	55 42.09	56 10 10.0 8.0	III B	43.920	23 55 17.93	17 15 10.33	17 6860
177	9.1	15.1	17.1	19.5	21.6	23.7	c	56 19.41	56 10 " "	III A	48.270	23 55 55.24	17 22 58.63	17 6861
178	9.0	17.4	19.6	21.6	23.9	26.0	c	57 21.71	55 34 10.0 6.8	V	44.300	23 56 57.55	−16 42 29.18	−16 6405

Reduction Elements. Zones 71.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 15.3....	+0.034	−0.060	−0.252	+0.008	−0.060	−0.252
15.4....	−0.018	−0.061	−0.253			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		Lalande 38458		α^2 Capricorni		ρ Capricorni		υ Capricorni		*h* Aquarii		Mayer 974	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	45 54 8.00		51 42 8.30		57 0 8.55		57 20 9.00		47 6 8.00		46 54 8.30	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	45.275	5 38.13	45.610	5 45.75		4 55.89		5 44.42	44.060	5 15.29	41.190	4 20.34
II	Red. to Mer......	.200	1.73	.650	1.68	43.080	1.65		1.63	.060	1.72	.130	1.72
VI	Inclination......	.090		.500		42.890	0.82	45.500	2.04	43.870		40.990	
VII	Refraction.......	.070	1 0.3	.480	1 14.0	.845	1 29.9	.480	1 31.1	.840	1 3.4	.970	1 3.1

		ω^2 Aquarii		2 Ceti	
		° ′ ″		° ′ ″	
	CIRCLE READING.	53 58 7.50		56 46 9.05	
		r	′ ″	r	′ ″
I	Microm. Eq......	42.800	4 51.44	41.260	4 22.13
II	Red. to Mer......	.780	1.66	.230	1.63
VI	Inclination......	.625		.080	
VII	Refraction.......	.610	1 21.1	.085	1 30.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 38458	20 3 8.51	11	−0.22	−38.61	46 0 48.2	49.6
α^2 Capricorni	20 12 52.16	11	−0.23	−38.69	51 49 9.7	49.8
ρ Capricorni	20 23 30.75	11	−0.25	−38.62	57 6 36.8	49.7
υ Capricorni	20 34 42.92	11	−0.25	−38.64	57 27 28.2	49.6
76 Draconis	20 50 49.17	8	+1.00	[−38.64]	316 48	....
h Aquarii	23 0 20.49	11	−0.22	−38.68	47 12 28.4	49.5
Mayer 974	23 30 46.34	11	−0.22	−38.60	46 59 33.5	49.5
ω^2 Aquarii	23 37 56.12	11	−0.24	−38.67	54 4 21.7	49.2
2 Ceti	23 59 1.24	11	−0.25	−38.64	56 52 2.9	48.8
α Ursae Minoris	1 21 25.93	5	+7.41	[−38.61]	310 12	....

h		s
20.308	*dt*	−38.640
	Hourly rate	−0.0025
		° ′ ″
	Adopted Equator Point	38 56 49.46

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
20 5	29.965	49.5	48.8
20 45	29.965	48.4	48.2
21 55	29.955	47.3	45.5
22 55	29.945	45.9	44.1
0 0	29.935	44.8	42.6

Note.

6. Close double, observed brighter, s. f. This note may belong to next star. See zones 130 and 136.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
52	−0.234
53	0.237
54	0.240
55	0.243
56	0.245
57	−0.248

APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
	52°	53°	54°	55°	56°	57°
h m	s	s	s	s	s	s
20 0	......	......	+17.502	+17.609	+17.718	+17.826
20 30	......	+17.083	17.177	17.274	17.369	17.468
21 0	+16.671	16.754	16.833	16.917	16.997	17.083
21 30	+16.343	16.410	16.478	16.545	16.614	16.681
22 0	......	16.064	16.114	16.167	16.218	16.269
22 30	......	15.718	15.750	15.787	15.822	15.857
23 0	......	15.377	15.393	15.411	15.429	15.444
23 30	......	+15.048	15.048	15.048	15.047	15.045
0 0	......	......	+14.720	+14.701	+14.683	+14.664

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894.0						*R*					
	52°	53°	54°	55°	56°	57°	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
20 0	....	.....	+ 1.75	+ 1.39	+ 1.04	+ 0.69	75.84	77.21	80.08	83.06	86.22	89.52
20 30	....	+ 4.56	4.22	3.87	3.52	3.17	75.91	77.29	80.15	83.14	86.30	89.60
21 0	+7.40	7.07	6.73	6.40	6.07	5.74	76.02	77.39	80.26	83.25	86.42	89.72
21 30	+9.88	9.56	9.25	8.93	8.62	8.29	76.17	77.55	80.43	83.43	86.60	89.91
22 0	....	12.04	11.75	11.45	11.16	10.86	76.33	77.71	80.59	83.60	86.78	90.09
22 30	....	14.43	14.17	13.89	13.63	13.36	76.44	77.82	80.70	83.71	86.90	90.22
23 0	....	16.69	16.45	16.21	15.97	15.74	76.54	77.93	80.82	83.83	87.02	90.34
23 30	....	+18.80	18.59	18.39	18.18	17.98	76.63	78.02	80.91	83.93	87.12	90.45
0 0	....	.....	+20.53	+20.36	+20.19	+20.02	76.74	78.13	81.02	84.04	87.24	90.57

1894 OCTOBER 18. ZONE 72. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.4	32.5	34.6	36.7	38.9	41.0	c	29 36.75	53 38 10.0	4.9	III	45.140	20 29 10.41	−14 47 5.70	−14 5786
2	9.3	32.8	34.7	36.6	38.7	40.8	a	32 6.46	56 4 10.0	5.5	I	45.845	20 31 40.32	17 13 23.17	17 6037
3	10.0	56.9	58.9	1.0	3.1	5.3	c	43 1.05	54 0 10.0	4.9	VII	45.035	20 42 34.59	15 9 3.40	15 5795
4	8.7	28.8	30.6	32.5	34.5	36.7	a	52 2.26	55 24 10.0	4.5	I	46.450	20 51 35.79	16 33 26.16	16 5739
5	9.2	7.6	9.2	13.5	15.6	17.8	b_2 c_3	52 17.77	55 42 10.0	5.6	III	41.370	20 51 51.32	16 49 52.60	17 6133
6	8.5	43.4	45.2	49.3	51.2	53.4	b_2 c_3	52 53.53	55 42 "	"	III B	49.790	20 52 27.07	16 49 20.39	16 5744
7	8.9	1.8	3.6	5.6	7.5	9.7	a	53 35.32	55 42 "	"	III B	45.170	20 53 8.85	16 47 52.24	16 5749
8	8.6	33.4	35.2	37.3	39.0	41.3	a	55 6.72	54 22 10.0	5.0	I	42.840	20 54 40.13	15 30 14.40	15 5858
9	8.6	5.2	6.8	11.0	13.1	15.3	(b_2 c_3)	55 15.30	55 2 10.0	5.1	III B	48.690	20 54 48.77	16 8 56.69	16 5759
10	8.8	33.4	35.5	37.7	39.9	42.1	c	55 37.73	55 2 "	"	V	52.520	20 55 11.20	−16 13 23.43	−16 5764
11	8.0	37.9	39.7	41.6	43.6	45.9	a	57 11.56	56 32 10.0	6.4	III	48.640	20 56 45.13	17 42 12.31	−17 6158
12	8.9	9.0	10.8	12.8	14.7	16.9	a	58 42.67	56 36 10.0	6.5	I	48.540	20 58 16.22	17 46 8.40	17 6166
13	8.6	2.1	3.7	7.9	10.0	12.3	(b_2 c_3)	59 12.23	55 40 10.0	5.6	III	46.550	20 58 45.69	−16 49 29.11	−16 5778

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	m
14	8.0	59.3	1.0	3.0	4.9	7.0	a	0 32.49	54 10 10.0 4.0	III 42.840	21 0 5.81	−15 18 13.30	−15 5884
15	9.0	35.7	37.3	41.5	43.7	45.9	b_2 c_3	1 45.84	55 12 9.4 4.6	III B 44.920	21 1 19.22	16 17 42.97	16 5794
16	8.0	57.2	59.2	1.5	3.7	5.7	c	2 1.47	55 12 “ “	V 49.510	21 1 34.86	16 22 24.22	16 5797
17	9.1	4.5	6.0	10.2	12.4	14.5	b_2 c_3	3 14.53	54 36 10.0 5.3	III 44.310	21 2 47.84	15 44 42.30	15 5896
18	8.7	46.0	48.1	49.9	51.8	53.9	e	3 20.41	54 10 10.0 5.1	VII 43.390	21 2 53.70	15 18 26.64	15 5897
19	9.0	23.0	24.8	29.0	30.6	33.1	c_4 d_3	4 20.61	53 2 10.0 4.5	VI 45.450	21 3 53.80	14 11 0.39	14 5945
20	8.9	39.3	41.5	43.4	45.4	47.3	e	5 13.54	56 12 10.0 6.5	V 47.580	21 4 46.96	−17 21 50.63	−17 6196
21	6.2	26.6	28.1	32.3	34.5	36.7	b_2 c_3	6 36.63	53 46 10.0 5.5	III B 48.830	21 6 9.85	−14 52 53.08	−15 5908
22	8.4	56.9	59.0	1.2	3.4	5.6	c	7 1.23	53 46 “ “	V A 44.840	21 6 34.45	14 58 3.92	15 5911
23	8.4	33.4	35.5	37.7	39.9	42.1	c	8 37.73	56 50 10.4 6.8	III 43.730	21 8 11.15	17 58 36.98	18 5886
24	8.9	44.8	47.0	49.1	51.4	53.6	c	9 49.19	56 50 “ “	III 45.820	21 9 22.59	17 59 16.44	18 5892
25	9.3	52.3	54.5	56.7	58.9	1.0	c	16 56.69	54 26 10.0 5.2	III 45.640	21 16 29.82	15 35 3.49	15 5960
26	8.7	38.1	40.3	42.3	44.2	46.1	e	25 12.46	55 36 10.0 5.4	VII 43.925	21 24 45.55	16 44 35.11	16 5876
27	8.0	31.3	33.4	35.6	37.7	39.9	c	28 35.59	55 30 10.0 5.7	V 43.600	21 28 8.62	16 38 26.56	16 5885
28	9.0	27.0	29.3	31.2	33.0	35.0	e	29 1.20	56 34 10.0 6.3	VII 42.340	21 28 34.30	17 42 7.23	17 6308
29	9.0	4.7	6.7	8.8	11.1	13.2	c	30 8.91	55 34 10.0 5.0	V 44.170	21 29 41.93	16 42 36.87	16 5889
30	8.9	59.4	1.3	3.3	5.4	7.4	a	31 33.15	56 24 10.0 6.3	III 44.830	21 31 6.21	−17 32 50.50	−17 6322
31	9.3	39.7	41.5	43.8	46.0	48.2	c	35 43.85	54 0 10.0 5.0	III 46.140	21 35 16.69	−15 9 7.31	−15 6034
32	9.4	27.0	28.9	31.0	33.3	35.4	c	37 31.13	55 52 10.0 5.0	III 44.940	21 37 4.06	17 0 49.09	17 6354
33	9.4	17.2	19.0	20.8	22.9	25.2	n	41 50.72	55 52 10.0 5.4	I 42.280	21 41 23.58	16 59 55.90	17 6370
34	8.6	5.1	7.0	8.8	10.9	13.0	a	47 38.75	56 24 10.0 5.9	I 42.970	21 47 11.57	17 32 9.65	17 6397
35	8.9	18.2	20.3	22.0	24.0	26.1	a	48 51.66	54 46 10.0 5.4	I 42.190	21 48 24.37	15 53 49.76	16 5967
36	8.2	24.7	26.5	28.4	30.3	32.6	a	51 57.75	52 40 10.4 6.0	I 47.730	21 51 30.30	13 49 29.79	14 6169
37	8.7	52.8	54.7	56.6	58.5	0.7	a	52 25.99	53 12 10.0 5.5	I 47.135	21 51 58.56	14 21 19.24	14 6173
38	8.8	22.3	24.2	26.0	28.1	30.1	a	52 55.47	53 12 “ “	I 49.640	21 52 28.04	14 22 6.81	14 6176
39	9.3	12.8	14.9	17.0	19.4	21.5	c	54 17.13	56 12 10.0 6.5	III 41.240	21 53 49.84	17 19 37.00	17 6411
40	7.8	56.4	58.1	0.2	2.0	4.0	a	56 29.53	53 40 10.0 4.5	I 44.160	21 56 2.07	−14 48 22.49	−15 6119
41	8.9	48.2	49.9	51.9	53.9	56.1	a	57 21.39	53 40 “ “	I 47.360	21 56 53.92	−14 49 23.25	−15 6125
42	9.0	47.9	49.7	51.6	53.7	55.9	a	58 21.41	55 30 10.0 5.9	I 47.020	21 57 54.02	16 39 22.17	16 6005
43	8.4	39.2	41.0	43.0	45.0	47.1	a	59 12.71	55 30 “ “	I 45.240	21 58 45.30	16 38 48.13	16 6012
44	9.0	12.7	14.2	16.3	18.2	20.4	a	0 45.82	54 14 10.0 5.2	I 41.140	22 0 18.34	15 21 26.04	15 6137
45	7.8	40.7	42.4	44.4	46.5	48.6	a	1 13.98	54 14 “ “	III 45.860	22 0 46.49	15 22 57.63	15 6139
46	9.1	30.7	32.8	34.9	37.1	39.4	c	1 34.99	56 0 10.0 6.1	V 43.430	22 1 7.58	17 8 18.25	17 6439
47	9.4	18.8	20.5	22.6	24.6	26.8	a	2 52.44	56 16 10.0 6.3	III A 41.670	22 2 25.03	17 26 56.85	17 6446
48	9.3	54.1	56.0	58.2	0.4	2.6	c	2 58.27	56 16 “ “	V B 39.765	22 2 30.85	17 19 56.70	17 6447
49	9.1	26.6	28.6	30.8	33.0	35.2	c	3 30.85	56 16 “ “	V B 33.100	22 3 3.42	17 17 48.74	17 6452
50	8.8	50.0	51.9	53.9	55.7	57.9	a	5 23.50	55 18 10.0 5.2	I 42.110	22 4 56.00	−16 25 46.58	−16 6034
51	9.0	16.8	18.7	20.9	23.1	25.3	c	8 20.97	55 18 10.0 5.2	III 46.040	22 7 53.42	−16 27 2.75	−16 6043
52	7.8	0.8	2.8	5.0	7.3	9.4	c	11 5.07	53 46 10.0 5.0	V 49.260	22 10 37.43	14 56 1.04	15 6174
53	9.0	37.9	40.2	42.2	44.0	46.0	e	11 12.60	53 46 “ “	VII B 42.100	22 10 44.95	14 50 33.74	15 6175
54	8.9	25.0	27.2	29.0	31.0	32.9	e	11 59.43	54 32 9.6 4.5	VII 45.270	22 11 31.80	15 40 47.93	15 6179
55	8.0	5.5	7.4	9.2	11.2	13.3	a	16 38.72	53 50 9.5 4.2	III 41.860	22 16 11.00	14 57 37.23	15 6200
56	9.0	18.7	20.9	23.0	25.1	27.4	c	17 23.03	56 4 10.0 6.4	III 40.720	22 16 55.39	17 11 22.87	17 6504
57	8.9	36.4	38.0	40.0	42.0	44.0	a	19 9.58	54 30 10.0 5.5	I 41.910	22 18 41.86	15 37 38.63	15 6211
58	9.1	21.8	23.7	26.0	28.1	30.3	c	22 25.99	53 32 10.0 5.4	III 42.120	22 21 58.18	14 39 41.44	14 6286
59	7.7	50.4	52.1	54.2	56.2	58.2	a	25 23.64	53 56 9.7 4.2	I 48.940	22 24 55.81	15 5 49.32	15 6231
60	8.4	30.9	32.6	34.6	36.6	38.7	n	26 4.09	53 56 “ “	I 45.580	22 25 36.25	−15 4 45.30	−15 6234
61	9.0	22.0	24.3	26.4	28.5	30.7	c	26 26.39	52 54 10.0 5.3	III 44.000	22 25 58.50	−14 2 15.05	−14 6297
62	8.1	12.9	15.0	17.1	19.4	21.5	c	27 17.19	52 54 “ “	III A 47.590	22 26 49.30	14 6 36.37	14 6301
63	9.2	31.6	33.6	35.4	37.3	39.5	a	32 5.07	55 6 10.0 5.3	I 44.460	22 31 37.18	16 14 27.07	16 6114
64	8.9	4.1	6.2	8.3	10.5	12.5	c	32 8.33	54 0 10.0 4.2	V 46.170	22 31 40.41	15 8 59.56	15 6249
65	8.6	58.0	0.0	2.3	4.5	6.6	c	33 2.29	52 46 10.0 4.8	V 41.180	22 32 34.32	13 53 21.63	14 6317
66	9.1	50.8	52.5	54.5	56.4	58.6	a	40 24.29	55 58 10.0 5.5	I 45.190	22 39 56.30	17 6 42.64	17 6584
67	8.9	7.7	9.5	11.5	13.6	15.6	a	40 41.30	55 58 “ “	III 42.680	22 40 13.31	17 5 56.68	17 6586
68	8.7	8.7	10.5	12.5	14.4	16.6	a	43 42.38	56 38 10.0 6.4	I 45.930	22 43 14.37	17 46 58.84	18 6196
69	9.0	4.5	6.3	8.2	10.1	12.3	a	44 37.57	52 58 10.0 4.6	I 44.440	22 44 9.45	14 6 19.46	14 6351
70	4.0	41.7	43.7	45.8	48.2	50.2	c	44 45.93	52 58 “ “	III 47.210	22 44 17.81	−14 7 13.95	−14 6354
71	9.3	20.3	22.2	24.1	25.9	28.2	a	46 53.66	54 38 10.0 4.2	I B 47.720	22 46 25.55	−15 44 13.56	−15 6285
72	9.2	10.8	12.5	14.5	16.5	18.7	a	47 44.13	54 38 “ “	I A 45.970	22 47 16.01	15 50 5.63	16 6167
73	9.0	29.5	31.3	33.3	35.2	37.5	a	49 2.97	55 14 9.7 4.3	I 46.390	22 48 34.87	16 23 1.89	16 6171
74	4.2	15.2	17.0	19.1	21.0	23.0	a	49 48.67	55 14 “ “	I 40.480	22 49 20.54	16 21 9.32	16 6173
75	9.0	24.4	26.0	30.3	32.4	34.6	b_2 c_3	50 34.51	53 8 10.0 4.3	III 44.610	22 50 6.32	14 16 24.25	14 6367
76	8.8	2.2	4.2	6.5	8.5	10.7	c	51 6.43	53 8 “ “	III 46.660	22 50 38.23	14 17 3.23	14 6368
77	9.0	21.0	22.6	24.6	26.6	28.8	a	52 54.12	53 46 10.0 4.3	I A 48.990	22 52 25.91	14 59 0.46	15 6308
78	8.9	1.3	3.3	5.5	7.7	9.8	c	53 5.53	53 46 “ “	III B 39.410	22 52 37.31	14 49 34.40	15 6310
79	9.1	12.0	13.8	15.7	17.7	19.9	a	54 45.20	53 40 10.0 4.4	I B 47.820	22 54 16.96	14 46 12.42	15 6314
80	8.9	24.8	26.5	28.3	30.3	32.5	a	54 57.87	53 40 “ “	IV 42.770	22 54 29.63	−14 47 51.16	−15 6315
81	8.7	24.8	26.7	28.5	30.6	32.6	a	55 58.03	53 40 “ “	I 42.330	22 55 29.78	−14 47 40.08	−15 6321
82	8.0	3.0	4.8	6.8	8.7	10.9	a	56 36.23	53 40 “ “	I 44.805	22 56 7.97	14 48 27.13	15 6325
83	8.6	22.8	24.5	26.4	28.3	30.5	a	57 55.89	53 40 “ “	I 41.700	22 57 27.61	14 47 27.95	15 6332
84	9.4	33.9	35.5	37.7	39.4	41.6	a	59 6.97	53 28 10.0 5.0	I B 40.700	22 58 38.68	14 31 56.40	14 6398
85	8.9	4.0	5.9	7.7	9.7	11.9	a	59 37.21	53 28 “ “	I A 48.450	22 59 8.91	−14 40 49.31	−14 6399

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
86	9.0	38.9	40.8	43.0	45.2	47.2	c	1 43.03	53 10 10.0 4.1	V	41.840	23 1 14.69	−14 17 32.39	−14 6407
87	8.7	16.5	18.8	20.6	22.5	24.4	e	3 50.99	54 26 10.0 5.0	V	46.830	23 3 22.65	15 35 11.02	15 6355
88	9.0	33.0	34.9	36.9	38.8	41.1	a	5 6.43	54 26 " "	III	46.920	23 4 38.06	15 35 11.04	15 6361
89	9.1	50.0	51.9	53.7	55.7	57.9	a	6 23.18	53 22 10.0 4.1	I B	41.430	23 5 54.79	14 26 9.17	14 6417
90	9.3	21.7	23.5	25.4	27.6	29.7	a	6 54.93	53 22 " "	I A	43.030	23 6 26.53	−14 33 5.07	−14 6419
91	9.5	24.0	25.8	29.7	32.0	34.2	b_2 c_3	7 34.20	56 30 10.0 5.5	III	47.865	23 7 5.83	−17 39 35.11	−17 6698
92	9.3	1.5	3.7	5.8	10.0	11.7	c_3 d_2	8 1.55	54 24 10.0 4.3	VI	45.330	23 7 33.14	15 32 42.56	15 6369
93	8.9	19.0	21.4	23.0	25.1	27.1	e	8 53.26	56 20 10.0 5.4	VII	42.810	23 8 24.86	17 28 1.33	17 6703
94	8.0	55.4	57.7	59.7	1.5	3.5	e	9 29.70	56 20 " "	VII B	50.310	23 9 1.29	17 27 11.61	17 6705
95	8.9	10.8	13.0	14.9	16.8	18.8	e	10 45.17	55 16 10.0 5.0	VII	43.210	23 10 16.74	16 24 5.59	16 6246
96	8.7	48.0	50.2	52.5	54.6	56.8	(c)	11 52.43	54 58 10.0 4.7	V	44.450	23 11 23.98	16 6 26.69	16 6250
97	7.7	31.4	32.8	37.0	39.3	41.5	b_2 c_3	12 41.43	55 34 10.0 5.8	V	46.360	23 12 12.97	16 43 5.27	16 6254
98	8.9	57.5	59.8	1.7	3.6	5.6	e	13 32.06	54 28 10.0 4.9	V	46.140	23 13 3.59	15 36 57.54	15 6391
99	9.0	26.0	28.1	32.4	33.8	36.6	c_4 d_3	14 23.87	53 44 10.0 4.3	VI B	39.960	23 13 55.38	14 47 45.95	15 6394
100	8.8	23.9	25.5	29.7	31.7	33.8	b_2 c_3	15 33.91	53 44 " "	III A	47.620	23 15 5.41	−14 56 34.83	−15 6400
101	9.5	14.4	16.5	18.7	21.0	23.2	c	16 18.77	54 38 10.0 5.1	V B	51.010	23 15 50.25	−15 45 18.32	−16 6265
102	8.9	2.2	4.1	6.4	8.5	10.7	c	17 6.39	55 42 10.0 5.0	V	47.220	23 16 37.87	16 51 21.52	17 6736
103	5.0	48.8	50.9	53.0	55.3	57.4	c	17 53.09	54 26 9.4 4.1	V	47.240	23 17 24.55	15 35 17.55	15 6406
104	9.1	53.2	55.5	57.5	59.2	1.2	e	18 27.53	55 56 10.0 5.3	VII	46.280	23 17 58.99	17 5 5.88	17 6742
105	9.2	31.8	34.0	36.1	38.4	40.5	c	19 36.17	55 36 10.0 5.0	V B	51.380	23 19 7.61	16 43 27.99	16 6278
106	9.0	34.4	36.7	38.6	40.4	42.4	e	20 9.14	52 54 10.4 5.4	VII	44.270	23 19 40.57	14 2 19.55	14 6466
107	9.3	43.0	45.4	47.4	49.1	51.0	e	21 17.44	55 38 10.0 5.1	V B	38.870	23 20 48.86	16 41 29.97	16 6285
108	9.6	12.7	14.1	18.2	20.5	22.7	b_2 c_3	23 22.67	55 28 10.0 5.6	III	44.440	23 22 54.06	16 36 26.51	16 6294
109	8.9	2.3	3.8	8.0	10.0	12.3	b_2 c_3	24 12.27	53 44 10.0 4.7	III	42.420	23 23 43.65	14 51 42.79	15 6433
110	9.0	56.0	57.5	1.7	3.9	6.1	b_2 c_3	25 6.10	56 40 10.0 6.5	III	46.610	23 24 37.47	−17 49 11.81	−18 6317
111	8.9	49.9	52.5	54.0	58.3	0.3	b_1 c_2	26 2.48	52 46 10.0 5.4	II B	45.110	23 25 33.84	−13 51 18.67	−14 6479
112	8.9	27.4	29.6	31.6	33.8	36.0	c	26 31.69	52 46 " "	V A	42.790	23 26 3.04	13 57 2.27	14 6481
113	8.8	6.8	8.7	10.6	12.6	14.7	a	27 39.94	52 46 " "	III B	43.420	23 27 11.28	13 50 47.36	14 6485
114	8.9	3.3	5.2	7.2	9.1	11.3	a	28 36.59	53 34 10.0 4.3	III	43.610	23 28 7.92	14 42 4.78	14 6487
115	8.5	50.4	52.0	54.0	55.9	58.1	a	29 23.47	53 34 " "	I A	48.805	23 28 54.79	14 46 55.09	15 6455
116	9.3	25.0	27.5	29.3	31.1	33.2	e	31 59.31	56 38 10.0 6.1	VII	47.070	23 31 30.57	17 47 23.34	18 6342
117	8.9	20.6	22.7	24.5	26.5	28.5	e	32 54.96	54 38 10.0 5.1	VII	43.310	23 32 26.23	15 46 5.44	16 6324
118	8.6	16.2	18.5	20.4	22.3	24.3	e	33 50.95	53 8 10.0 4.6	V	43.240	23 33 22.21	14 15 58.41	14 6509
119	5.7	54.5	56.2	0.4	2.4	4.6	b_2 c_3	35 4.61	53 38 10.0 4.8	III	44.880	23 34 35.85	14 46 29.42	15 6471
120	8.7	31.8	33.8	36.0	40.2	41.9	c_3 d_2	35 31.74	54 50 10.0 4.9	V	44.580	23 35 2.97	−15 58 28.65	−16 6332
121	8.8	26.6	28.2	32.4	34.5	36.8	b_2 c_3	36 36.66	52 54 10.3 5.5	III	42.660	23 36 7.89	−14 1 45.78	−14 6523
122	9.1	18.9	20.6	22.7	24.5	28.7	a	39 51.95	52 50 10.7 6.1	III	42.920	23 39 23.13	13 57 51.12	14 6535
123	8.7	45.6	47.4	49.3	51.4	53.5	a	41 18.71	52 50 " "	I A	41.460	23 40 49.88	14 0 34.76	14 6539
124	8.8	4.5	6.4	8.3	10.0	12.4	a	41 37.59	52 50 " "	III B	44.670	23 41 8.75	13 55 12.17	14 6540
125	8.8	21.0	22.8	24.8	26.7	29.0	a	42 54.49	55 20 10.5 6.2	I A	46.660	23 42 25.61	16 32 20.53	16 6363
126	9.2	49.5	51.0	55.3	57.4	59.7	b_2 c_3	42 59.61	55 20 " "	III B	41.970	23 42 30.74	16 24 27.54	16 6365
127	8.9	44.5	46.2	50.4	52.4	54.7	b_2 c_3	43 54.65	54 38 10.0 4.8	III	42.570	23 43 25.78	15 45 48.37	16 6370
128	7.8	17.0	18.9	20.8	22.8	25.0	a	44 50.51	55 16 10.4 6.2	III	46.100	23 44 21.62	16 24 58.29	16 6373
129	8.0	13.7	15.6	17.6	19.4	21.8	a	45 47.11	54 24 10.0 4.7	III	44.410	23 45 18.22	15 32 22.76	15 6506
130	9.3	16.5	18.4	20.2	22.2	24.4	a	47 50.03	55 44 10.0 5.0	I	42.820	23 47 21.09	−16 51 54.72	−17 6835
131	8.9	17.0	18.8	20.7	22.6	24.8	a	50 50.10	53 10 10.0 4.8	I	44.960	23 50 21.15	−14 18 28.39	−14 6577
132	8.9	2.9	4.7	6.6	8.7	10.8	a	51 36.02	52 56 10.0 5.9	I	43.610	23 51 7.07	14 4 2.64	14 6581
133	9.2	10.0	11.9	13.9	15.8	17.9	a	52 43.55	55 30 10.0 5.7	I	46.690	23 52 14.54	16 39 8.28	16 6390
134	7.8	8.0	9.9	11.8	13.8	15.9	a	53 41.49	55 16 10.0 5.7	I	43.850	23 53 12.48	16 24 13.58	16 6394
135	9.5	55.8	57.6	59.5	1.4	3.7	a	54 29.28	55 38 10.0 5.8	I	44.980	23 54 0.25	16 46 36.26	17 6855
136	9.5	49.4	51.5	53.3	55.2	57.3	a	55 22.80	54 14 10.0 5.4	I	44.460	23 54 53.79	15 22 22.22	15 6527
137	8.2	32.4	34.0	36.0	38.0	40.2	a	57 5.84	55 56 10.0 5.2	I	47.290	23 56 36.76	17 5 20.98	17 6864
138	9.1	22.2	24.0	25.9	27.9	30.2	a	57 55.65	55 16 10.0 5.7	I	40.870	23 57 26.58	−16 23 17.09	−16 6407

Reduction Elements. Zone 72.

	OBSERVED.			ADOPTED.		
1894.	c	b	a	c	b	a
	s	s	s	s	s	s
October 18.3....	+0.051	−0.159	−0.459	+0.012	−0.154	−0.392
18.4....	−0.026	−0.148	−0.324			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		α^2 Capricorni		β Capricorni		ρ Capricorni		υ Capricorni		β Aquarii		*h* Aquarii	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		51 42 7.80		53 56 7.25		57 0 8.25		57 20 8.25		44 52 8.00		47 6 7.85	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	45.800	5 47.77	47.320	6 16.66	43.165	4 58.30	45.840	5 48.68		5 43.75		5 14.66
II	Red. to Mer.	.745	1.68	.260	1.66	.100	1.63	.795	1.63		1.74		1.72
VI	Inclination	.590		.090		.000		.640		45.470	2.04	43.950	2.04
VII	Refraction	.530	1 12.3	.070	1 18.4	42.995	1 27.9	.580	1 29.1	.440	57.2	.900	1 2.1
		Mayer 974		ω^2 Aquarii		2 Ceti							
		° ′ ″		° ′ ″		° ′ ″							
CIRCLE READING.		46 54 7.40		53 58 7.30		56 46 8.50							
		r	′ ″	r	′ ″	r	′ ″						
I	Microm. Eq.	41.320	4 22.85	42.970	4 53.98	41.460	4 25.30						
II	Red. to Mer.	.275	1.72	.900	1.66	.410	1.63						
VI	Inclination	.120		.760		.260							
VII	Refraction	.090	1 1.8	.720	1 19.4	.190	1 28.3						

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
α^2 Capricorni	20 12 56.73	11	−0.40	−43.14	51 49 9.5	49.5
β Capricorni	20 15 49.73	11	−0.41	−43.13	54 3 44.0	49.8
ρ Capricorni	20 23 35.36	11	−0.42	−43.10	57 6 36.1	49.0
υ Capricorni	20 34 47.51	11	−0.42	−43.10	57 27 27.7	48.9
1 H. Draconis S. P.	21 22 49.49	11	−1.89	[−43.48]	300 44	....
β Aquarii	21 26 45.27	11	−0.38	−43.15	44 58 52.7	50.1
h Aquarii	23 0 25.20	11	−0.38	−43.24	47 12 28.4	49.5
Mayer 974	23 30 51.25	11	−0.38	−43.35	46 59 33.8	49.7
ω^2 Aquarii	23 38 0.95	11	−0.41	−43.34	54 4 22.3	49.5
2 Ceti	23 59 6.21	11	−0.42	−43.45	56 52 3.7	49.3
α Ursae Minoris	1 21 31.26	5	+9.72	[−45.77]	310 12	....

h 20.580 .... *dt* .... s −43.124

Hourly rate .... − 0.0749

Adopted Equator Point .... 38° 56′ 49.48″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
20 17	29.905	61.5	58.8
21 12	29.905	58.0	56.9
22 14	29.915	56.4	55.0
23 2	29.915	55.3	53.6
23 59	29.935	54.4	52.3

Notes.

3. Exceedingly difficult.
65. Thin haze.
92. Difficult.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.402	20 30	......	+17.118	+17.214	+17.309	+17.406	+17.504
53	0.406	21 0	......	16.785	16.867	16.950	17.032	17.117
54	0.410	21 30	+16.372	16.440	16.507	16.575	16.644	16.712
55	0.414	22 0	16.036	16.088	16.139	16.191	16.244	16.295
56	0.417	22 30	15.699	15.734	15.769	15.806	15.840	15.876
57	−0.421	23 0	15.369	15.388	15.404	15.423	15.441	15.458
		23 30	15.050	15.052	15.053	15.052	15.052	15.051
		0 0	+14.750	+14.733	+14.716	+14.698	+14.680	+14.661

APPARENT RIGHT ASCENSION.	$D=$ Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
20 30	.....	+ 4.56	+ 4.21	+ 3.86	+ 3.51	+ 3.16	74.23	75.58	78.38	81.30	84.39	87.62
21 0	.....	7.05	6.72	6.37	6.04	5.69	74.39	75.74	78.54	81.47	84.57	87.80
21 30	+ 9.84	9.53	9.20	8.87	8.54	8.21	74.54	75.89	78.70	81.64	84.74	87.98
22 0	12.28	11.98	11.67	11.36	11.05	10.74	74.70	76.05	78.87	81.81	84.92	88.17
22 30	14.61	14.33	14.05	13.78	13.49	13.21	74.83	76.19	79.01	81.96	85.07	88.33
23 0	16.82	16.56	16.31	16.06	15.81	15.55	74.97	76.33	79.16	82.11	85.23	88.49
23 30	18.84	18.63	18.42	18.19	17.97	17.75	75.09	76.45	79.29	82.24	85.37	88.63
0 0	+20.69	+20.51	+20.33	+20.15	+19.97	+19.78	75.23	76.59	79.43	82.39	85.53	88.80

1894 OCTOBER 20. ZONE 73. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.8	45.9	48.0	50.2	52.4	54.4	c	54 50.19	56 30 10.0 11.5	V 50.060	20 54 21.85	−17 40 38.81	−17 6144
2	9.0	19.4	21.1	23.2	25.2	27.3	a	54 53.09	56 42 10.0 13.1	I 44.350	20 54 24.76	17 50 48.00	....
3	9.0	37.2	39.5	41.4	43.4	45.3	e	55 11.69	55 10 10.0 11.5	VII B 51.490	20 54 43.22	16 17 51.26	16 5758
4	8.4	33.8	35.6	37.6	39.6	41.8	a	2 7.25	55 0 10.0 11.3	I 44.280	21 1 38.68	16 8 39.04	16 5798
5	7.9	2.3	4.4	6.2	8.2	10.3	a	2 36.13	56 42 10.0 12.4	I 46.350	21 2 7.69	17 51 23.53	18 5862
6	8.9	58.5	0.4	2.3	4.2	6.4	a	3 31.67	53 6 10.0 10.2	I 43.680	21 3 2.92	14 14 21.95	14 5942
7	8.6	30.2	32.0	33.9	35.8	37.9	a	5 3.53	54 58 10.0 10.7	I 43.670	21 4 34.92	16 6 26.25	16 5810
8	9.3	42.9	44.9	46.6	48.8	50.9	a	30 16.36	54 46 10.0 10.5	V 48.150	21 29 47.40	15 55 47.95	16 5890
9	8.8	17.8	19.7	21.6	23.5	25.7	a	56 51.41	56 6 10.0 12.0	I 47.430	21 56 22.16	17 15 29.67	17 6421
10	8.6	53.6	55.4	57.4	59.4	1.6	a	57 27.26	56 18 10.0 11.7	III 45.190	21 56 58.01	−17 26 49.17	−17 6422[1]
11	8.6	23.3	25.3	27.4	29.7	32.0	c	57 27.55	56 18 " "	V 44.990	21 56 58.30	−17 26 46.98	−17 6422[2]
12	9.0	44.0	46.2	48.3	50.4	52.5	c	4 48.29	53 2 10.0 11.2	III B 39.440	22 4 18.76	14 5 37.27	14 6222
13	9.0	38.7	40.9	43.0	45.1	47.2	c	5 42.99	53 2 " "	III A 48.920	22 5 13.46	14 15 2.94	14 6224
14	8.5	17.9	19.8	21.7	23.7	25.8	a	11 51.26	54 20 10.0 11.5	I 42.210	22 11 21.71	15 27 42.77	15 6178
15	8.6	50.2	52.4	54.6	56.7	58.9	c	11 54.57	55 44 10.0 11.0	III 45.900	22 11 25.09	16 52 58.31	17 6480
16	8.9	26.4	28.8	30.7	32.5	34.6	e	12 0.74	56 20 10.0 11.7	VII 45.530	22 11 31.28	17 28 55.37	17 6481
17	8.8	3.8	5.6	7.6	9.6	11.7	a	19 36.91	52 34 10.0 10.6	I 43.685	22 19 7.18	13 42 4.89	13 6177
18	8.2	37.8	40.0	42.1	44.4	46.5	c	19 42.17	52 34 " "	III 41.625	22 19 12.44	13 41 27.44	13 6178
19	8.9	17.3	19.6	21.4	23.4	25.2	■	19 52.06	52 34 " "	VII 47.170	22 19 22.33	13 43 16.07	13 6179
20	8.9	36.2	38.1	39.9	42.0	44.1	■	26 9.56	54 30 10.0 10.6	I 45.750	22 25 39.83	−15 38 48.10	−15 6235
21	8.6	6.0	7.6	9.7	11.6	13.8	a	26 39.29	54 48 10.0 10.0	III 43.930	22 26 9.56	−15 56 15.73	−16 6099
22	9.0	20.1	22.2	24.4	26.6	28.7	c	27 24.41	56 14 10.0 12.0	V 43.990	22 26 54.72	17 22 23.40	17 6546
23	8.8	34.3	36.2	38.0	40.0	42.0	a	32 7.49	53 44 10.0 9.5	I 42.490	22 31 37.64	14 51 42.83	15 6248
24	8.8	1.0	3.1	5.3	7.5	9.7	c	33 5.33	52 34 10.0 10.1	III 46.330	22 32 35.43	13 42 55.05	13 6230
25	8.8	30.2	32.0	34.0	35.9	38.2	a	40 3.35	52 58 10.0 9.6	I 46.960	22 39 33.38	14 7 5.18	14 6336
26	8.7	59.9	1.5	5.7	7.8	9.8	b_2 c_3	40 9.91	52 58 " "	III A 45.250	22 39 39.94	14 9 47.49	14 6337
27	8.8	57.6	59.7	1.7	3.6	5.6	e	40 32.27	52 58 " "	VII 42.620	22 40 2.29	14 5 47.41	14 6341
28	8.9	50.8	53.0	54.9	56.7	58.7	e	41 25.46	52 58 " "	VII B 44.555	22 40 55.47	14 3 11.71	14 6344
29	8.3	19.7	21.5	23.5	25.4	27.6	a	46 52.87	53 16 10.0 9.3	I 41.780	22 46 22.82	14 23 26.52	14 6359
30	8.6	3.9	5.8	7.7	9.7	12.0	a	47 37.56	56 2 10.0 11.0	I 47.030	22 47 7.57	−17 11 14.61	−17 6615
31	8.4	52.5	54.1	58.4	0.4	2.6	b_2 c_3	48 2.56	52 30 10.0 10.0	III 43.010	22 47 32.48	−13 37 50.11	−13 6292
32	9.0	53.4	55.4	57.3	59.4	1.5	a	49 27.20	56 26 10.0 11.5	I 42.550	22 48 57.20	17 33 50.60	17 6618
33	8.5	32.0	34.2	36.4	38.5	40.8	c	49 36.39	54 24 10.0 10.6	V 44.955	22 49 6.34	15 32 33.70	15 6294
34	9.1	11.3	12.9	17.0	19.1	21.3	b_2 c_3	50 21.32	54 24 " "	III 41.030	22 49 51.26	15 31 17.29	15 6298
35	8.3	9.2	11.0	12.9	14.9	17.0	a	51 42.49	54 24 " "	I 41.510	22 51 12.40	15 31 24.50	15 6305
36	9.3	43.5	45.3	47.1	49.2	51.4	a	54 17.08	56 18 10.0 11.2	III 41.920	22 53 47.00	17 25 39.53	17 6637
37	9.2	28.7	30.5	32.5	34.4	36.6	■	0 2.13	55 6 10.0 11.1	I 48.760	22 59 31.95	16 15 44.09	16 6204
38	7.7	30.0	32.0	34.2	36.4	38.6	c	0 34.25	56 18 10.0 11.3	III 43.925	23 0 4.08	17 26 17.35	17 6663
39	8.9	44.0	45.8	47.8	49.7	51.9	a	4 17.15	53 8 10.0 9.6	I 41.910	23 3 46.87	14 15 27.56	14 6412
40	8.0	2.6	4.4	6.4	8.3	10.5	(a)	5 35.74	53 8 " "	I B 38.810	23 5 5.45	−14 11 16.24	−14 6413
41	8.7	36.7	38.8	40.8	43.0	45.2	c	5 40.91	52 46 10.0 9.5	V B 44.560	23 5 10.61	−13 51 7.98	−14 6415
42	8.8	21.9	24.1	26.1	27.9	29.8	e	5 56.62	52 46 " "	V 45.930	23 5 26.32	13 54 46.46	14 6416
43	7.5	54.3	55.9	0.0	2.0	4.2	b_2 c_3	9 4.24	52 46 " "	III 50.800	23 8 33.90	13 56 17.36	14 6424
44	9.0	53.8	55.3	59.6	1.7	3.7	b_2 c_3	10 3.79	53 2 10.0 9.7	III 43.790	23 9 33.44	14 10 4.68	14 6428
45	8.9	28.0	29.6	33.8	35.7	38.0	b_2 c_3	10 37.98	52 46 10.0 9.8	III 44.020	23 10 7.62	13 54 8.40	14 6431
46	7.8	4.3	6.4	8.6	10.8	12.8	c	11 8.59	52 36 10.4 10.8	V 42.650	23 10 38.22	13 43 44.24	13 6372
47	8.0	12.0	13.8	15.7	17.7	19.9	a	12 45.12	53 2 10.0 10.0	I 47.410	23 12 14.74	14 11 11.81	14 6438
48	8.7	0.2	1.8	6.0	8.0	10.2	b_2 c_3	13 10.20	52 34 10.0 10.0	III A 47.400	23 12 39.81	13 46 25.34	14 6440
49	9.0	48.0	49.8	51.8	53.7	55.9	a	14 21.07	52 34 " "	I B 41.450	23 13 50.67	13 38 4.95	13 6382
50	8.3	42.7	44.3	48.5	50.6	52.8	b_2 c_3	14 52.76	53 28 10.0 9.6	III 45.985	23 14 22.36	−14 36 47.31	−14 6450
51	8.0	59.2	1.0	2.8	4.8	7.0	a	16 32.21	52 40 10.0 10.3	I 46.950	23 16 1.78	−13 49 2.16	−14 6453
52	8.7	40.3	41.8	46.0	48.1	50.3	b_2 c_3	16 50.28	53 22 10.0 9.6	III A 48.590	23 16 19.85	14 34 49.65	14 6456
53	8.9	21.7	23.7	25.5	27.4	29.6	a	17 54.92	53 22 " "	I (B) 42.090	23 17 24.48	14 26 18.79	14 6460
54	9.0	7.3	8.7	13.0	15.1	17.3	b_2 c_3	18 17.24	52 54 10.0 10.0	III 44.510	23 17 46.79	14 2 17.89	14 6461
55	9.2	56.8	58.6	0.5	2.5	4.6	a	19 30.08	54 20 10.0 10.5	III 42.110	23 18 59.63	15 27 36.14	15 6413
56	8.0	9.1	10.9	12.9	14.8	16.9	a	20 42.27	53 30 10.0 9.7	I B 40.670	23 20 11.79	14 33 52.08	14 6467
57	8.9	34.8	36.7	38.7	40.6	42.8	a	21 8.09	53 30 " "	I A 46.970	23 20 37.61	14 42 17.41	14 6470
58	8.8	41.8	43.5	47.7	49.9	52.0	b_2 c_3	21 52.01	55 42 10.0 10.2	III 42.290	23 21 21.53	14 49 43.15	17 6752
59	9.0	26.9	29.0	31.2	33.2	35.4	c	22 31.15	54 14 10.0 10.5	V 45.500	23 22 0.66	15 22 41.94	15 6425
60	8.8	28.9	30.7	32.5	34.6	36.7	■	24 2.03	53 26 10.0 9.9	I 47.230	23 23 31.52	−14 35 9.03	−14 6475
61	9.0	0.2	2.0	3.9	5.9	8.0	a	25 33.35	53 24 10.0 9.6	I 42.740	23 25 2.82	−14 31 43.34	−14 6478
62	9 4	53.7	55.7	57.5	59.5	1.7	■	26 27.18	54 56 10.0 10.1	I 45.810	23 25 56.64	16 4 46.05	16 6306
63	9.0	52.6	54.4	56.3	58.3	0.5	a	27 25.76	53 22 10.0 9.5	I 41.635	23 26 55.21	14 29 22.16	14 6483
64	9.5	36.0	37.7	39.8	41.9	44.0	a	28 9.45	55 0 10.0 10.3	I 44.140	23 27 38.89	16 8 14.52	16 6310
65	9.0	46.2	48.1	50.0	52.0	54.1	a	29 19.36	52 56 10.0 9.5	I B 49.280	23 28 48.77	14 2 34.33	14 6490
66	8.5	56.7	58.4	0.4	2.4	4.5	■	29 29.77	52 56 " "	III A 47.240	23 28 59.18	14 8 22.61	14 6492
67	8.8	31.2	32.9	34.8	36.8	38.9	a	31 4.20	52 56 " "	I B 42.730	23 30 33.59	−14 0 29.64	−14 6496

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	
68	8.8	3.1	4.9	6.9	8.8	11.0	a	31 36.22	52 56	10.0	9.5	I B	45.590	23 31 5.61	−14 1 24.07	−14 6499
69	9.0	38.1	40.1	42.2	44.0	46.2	a	32 11.41	52 56	"	"	IV A	42.040	23 31 40.79	14 6 44.41	14 6502
70	8.5	50.2	51.9	53.9	55.9	58.0	a	32 23.27	52 56	"	"	IV A	43.000	23 31 52.65	−14 7 2.68	−14 6504
71	6.5	17.4	19.5	21.6	23.8	26.0	c	33 21.67	54 30	10.0	10.3	III	45.680	23 32 51.04	−15 38 44.33	−15 6464
72	9.5	42.4	44.2	46.1	48.0	50.3	a	37 15.69	54 24	10.0	10.0	III	45.670	23 36 45.01	15 32 43.76	15 6475
73	9.4	39.0	41.3	43.1	45.0	47.0	e	39 13.68	53 14	10.0	9.7	V	47.530	23 38 42.98	14 23 17.64	14 6534
74	8.6	9.5	11.3	13.2	15.1	17.2	a	40 42.57	53 6	10.0	9.9	III	44.325	23 40 11.85	14 14 14.79	14 6536
75	8.2	3.0	4.7	8.8	10.9	13.2	b_2 c_3	41 13.12	54 10	10.0	10.0	V	45.260	23 40 42.39	15 18 37.03	15 6491
76	9.4	12.0	13.5	17.7	19.8	21.9	b_2 c_3	42 21.96	53 32	10.0	10.4	III	45.440	23 41 51.22	14 40 37.40	14 6546
77	8.0	44.6	46.4	48.3	50.3	52.5	a	43 17.76	53 20	10.0	9.7	III	44.160	23 42 47.01	14 28 12.17	14 6550
78	9.0	27.5	29.4	31.3	33.2	35.5	a	44 0.72	53 20	"	"	I B	49.160	23 43 29.96	14 26 33.33	14 6552
79	9.3	28.1	29.6	33.7	35.8	38.0	b_2 c_3	44 38.01	52 58	10.5	10.8	III	44.310	23 44 7.25	14 6 14.93	14 6557
80	8.0	19.2	21.0	23.1	25.0	27.2	a	45 52.33	52 32	10.5	10.8	I	43.670	23 45 21.56	−13 39 59.94	−13 6471
81	......	26.5	28.3	30.4	32.3	34.5	a	46 59.94	54 48	10.0	10.3	I B	50.490	23 46 29.14	−15 55 2.92	−16 6378
82	6.0	19.4	21.1	23.1	25.0	27.1	a	47 52.53	53 40	10.0	10.1	I	45.015	23 47 21.73	14 48 27.85	15 6515
83	7.5	35.2	37.0	39.0	40.9	43.3	a	51 8.32	52 34	10.0	10.3	I	45.050	23 50 37.49	13 42 25.97	13 6485
84	8.0	35.3	37.7	39.6	41.3	43.4	e	51 10.04	53 24	10.0	10.0	VII	41.550	23 50 39.20	14 31 26.18	14 6579
85	9.4	47.2	49.0	51.0	53.0	55.2	a	53 20.52	54 6	10.0	9.9	I	43.510	23 52 49.64	15 14 0.47	15 6524
86	7.8	24.2	26.1	28.0	29.9	32.2	a	53 57.45	53 32	10.0	10.1	III	46.390	23 53 26.57	14 40 55.74	14 6588
87	9.0	14.8	16.7	18.7	20.6	22.8	a	54 47.98	52 48	10.0	10.1	III B	41.750	23 54 17.10	13 52 13.28	14 6592
88	9.0	11.0	12.9	14.7	16.7	18.8	a	55 44.09	52 48	"	"	I ( )	46.660	23 55 13.20	13 56 57.28	14 6597
89	7.9	5.2	7.0	8.8	10.7	13.0	a	57 38.21	52 50	10.0	10.8	I	43.400	23 57 7.30	13 57 55.79	14 6603
90	9.1	39.5	41.5	43.7	45.9	48.0	c	57 43.73	52 50	"	"	III	45.390	23 57 12.82	−13 58 35 46	−14 6605
91	9.0	23.2	24.9	26.8	28.9	31.0	a	58 56.21	52 38	10.0	10.5	III	46.830	23 58 25.28	−13 47 2.27	−14 6608
92	9.1	11.9	14.0	16.3	18.4	20.6	c	59 16.25	53 6	10.0	10.0	V	44.590	23 58 45.32	14 14 22.22	14 6611
93	8.0	17.0	19.0	20.9	22.9	25.0	a	0 50.36	53 50	10.0	10.1	III	45.520	0 0 19.40	14 58 40.32	15 6539
94	9.2	45.8	47.6	49.6	51.5	53.8	a	1 19.06	53 50	"	"	III	47.620	0 0 48.09	14 59 20.33	15 6542
95	9.5	1.0	2.6	7.0	9.0	11.0	b_2 c_3	2 11.09	53 10	10.0	9.6	III	44.190	0 1 40.13	14 18 13.12	14 6619
96	9.2	49.2	51.0	52.9	54.9	57.0	a	3 22.39	53 38	10.0	9.3	I	46.080	0 2 51.40	14 46 48.43	15 3^1
97	9.2	13.2	14.6	18.8	20.7	22.9	b_2 c_3	3 23.03	53 38	"	"	III	46.205	0 2 52.04	14 46 52.62	15 3^2
98	9.3	12.6	14.2	18.4	20.4	22.6	b_2 c_3	4 22.60	52 54	10.0	10.0	III	42.110	0 3 51.62	14 1 33.20	14 5
99	9.1	6.5	8.4	10.4	12.3	14.5	a	5 39.72	53 0	10.7	10.4	I A	44.530	0 5 8.71	14 11 31.56	14 9
100	9.4	2.7	4.6	6.5	8.4	10.6	a	6 35.84	53 0	"	"	I B	42.300	0 6 4.83	−14 4 23.74	−14 17
101	6.8	55.0	56.8	58.7	0.6	2.8	a	7 28.11	53 14	10.0	9.8	I	44.050	0 6 57.08	−14 22 9.30	−14 19
102	8.1	28.6	30.4	32.2	34.3	36.5	a	8 1.69	53 2	10.0	9.9	III	43.490	0 7 30.66	14 10 0.01	14 23
103	9.3	29.0	30.9	33.0	34.8	37.0	a	9 2.42	54 18	10.0	9.9	I (A)	46.050	0 8 31.35	15 30 3.68	15 26
104	7.7	31.9	33.7	35.6	37.5	39.7	a	10 5.14	54 18	"	"	I B	39.680	0 9 34.06	15 21 36.93	15 32
105	8.8	17.0	18.6	20.5	22.4	24.6	a	10 49.85	52 32	10.0	10.1	III B	42.980	0 10 18.80	13 36 37.06	13 35
106	9.1	50.4	52.4	54.6	56.9	59.0	c	10 54.67	52 32	"	"	V	48.040	0 10 23.62	13 41 27.31	13 37
107	9.0	24.8	26.9	29.1	31.2	33.4	c	12 29.09	52 32	"	"	III B	44.220	0 11 58.02	13 37 0.79	13 40
108	8.9	9.2	11.1	13.3	15.5	17.6	c	16 13.35	53 4	10.0	9.8	V	40.860	0 15 42.23	14 11 12.32	14 49
109	9.0	5.6	7.4	9.3	11.3	13.5	a	17 38.70	52 52	10.0	9.9	I	47.370	0 17 7.56	14 1 12.44	14 55
110	9.0	45.5	47.4	49.5	51.4	53.6	a	18 18.76	52 52	"	"	I A	46.370	0 17 47.62	−14 4 6.67	−14 56
111	8.9	49.8	51.6	53.6	55.5	57.8	a	19 23.06	53 46	10.0	10.1	I	43.535	0 18 51.88	−14 54 2.06	−15 60
112	9.5	40.6	42.6	44.4	46.4	48.7	a	20 13.99	54 8	10.0	10.1	I	47.310	0 19 42.79	15 17 15.01	15 63
113	8.9	0.2	2.0	4.0	5.9	8.2	a	21 33.29	52 30	10.0	10.4	I	43.050	0 21 2.12	13 37 49.97	13 69
114	8.8	31.3	33.1	35.0	36.9	39.2	a	22 4.45	53 26	10.4	10.6	III	46.120	0 21 33.25	14 34 52.93	14 67
115	8.9	29.7	31.8	33.7	35.7	37.9	a	23 3.31	54 52	10.0	10.6	I	44.620	0 22 32.06	16 0 26.35	16 75
116	8.9	29.5	31.3	33.3	35.2	37.4	a	26 2.65	53 8	10.5	10.4	I	43.650	0 25 31.42	14 16 3.69	14 75
117	9.0	53.4	55.3	57.1	59.0	1.3	a	27 26.48	52 44	10.0	10.0	I	42.580	0 26 55.25	13 51 42.03	14 80
118	8.9	44.0	45.7	47.6	49.6	51.7	a	28 16.97	52 44	"	"	I (B)	42.660	0 27 45.74	13 48 31.41	14 84
119	9.7	3.9	5.8	7.7	9.7	11.9	a	29 37.41	55 16	10.4	11.2	I	45.640	0 29 6.07	16 24 48.16	16 95
120	9.4	4.8	6.6	8.5	10.5	12.8	a	30 38.10	54 12	10.0	9.8	I A	41.815	0 30 6.78	−15 22 44.80	−15 103
121	8.9	34.4	36.3	38.2	40.2	42.3	a	31 7.73	54 12	"	"	I B	44.650	0 30 36.41	−15 17 13.37	−15 105
122	7.0	28.6	30.7	32.9	35.0	37.1	c	31 32.87	54 22	10.8	11.3	III	47.400	0 31 1.53	15 31 21.42	15 109
123	8.8	29.3	31.1	33.1	35.0	37.3	a	33 2.77	55 14	10.0	11.1	III	45.130	0 32 31.39	16 22 40.37	16 105
124	9.1	3.3	5.3	7.1	9.0	11.0	a	34 36.39	52 40	10.0	10.5	I	44.440	0 34 5.08	13 48 18.37	14 105
125	8.9	52.4	54.2	56.0	58.0	0.2	a	35 25.39	52 30	10.0	10.0	I	42.690	0 34 54.08	13 37 44.50	13 113
126	9.4	23.9	25.6	27.4	29.3	31.5	a	35 56.90	53 28	10.0	9.6	III	45.045	0 35 25.55	14 36 33.48	14 113
127	9.4	31.4	33.3	35.1	37.0	39.3	a	37 4.52	53 4	10.0	9.7	I	43.580	0 36 33.18	−14 12 2.96	−14 117

Reduction Elements. Zone 73.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 20.3....	+0.091	−0.276	−0.327	+0.048	−0.226	−0.300
20.5....	+0.004	−0.176	−0.273			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ε Aquarii		ζ Capricorni		β Aquarii		γ Capricorni		ω^2 Aquarii		ι Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	48 42 10.55		61 42 10.40		44 52 10.65		55 58 10.40		53 58 9.90		48 14 10.30	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	48.045	6 30.81	43.485	5 3.98	45.765	5 47.83		5 35.58		4 55.92	46.300	5 57.81
II Red. to Mer.	47.995	1.70	.455	1.57	.740	1.74	45.150	1.66	43.060	1.67	.250	1.71
VI Inclination	.855		.280		.590		44.975	0.82	42.890	0.82	.130	
VII Refraction	.820	1 4.3	.235	1 44.9	.580	56.4	.950	1 23.8	.870	1 18.3	.095	1 3.9

	Lalande 628		β Ceti	
	° ′ ″		° ′ ″	
CIRCLE READING.	59 44 10.55		57 24 10.65	
	r	′ ″	r	′ ″
I Microm. Eq.	45.880	5 49.75	43.110	4 56.46
II Red. to Mer.	.870	1.59	.000	1.63
VI Inclination	.700		42.880	
VII Refraction	.630	1 37.6	.880	1 29.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Aquarii	20 42 44.63	11	−0.33	−45.18	48 49 47.4	53.2
76 Draconis	20 50 55.09	8	+0.65	[−45.04]	316 48	....
ζ Capricorni	21 21 25.86	11	−0.35	−45.22	61 49 0.9	53.4
β Aquarii	21 26 47.20	11	−0.33	−45.16	44 58 56.6	53.9
γ Capricorni	21 35 1.96	11	−0.34	−45.23	56 5 12.3	53.6
γ Cephei	23 35 48.81	7	+0.25	[−45.45]	321 54	....
ω^2 Aquarii	23 38 2.77	11	−0.34	−45.24	54 4 26.6	53.7
ι Ceti	0 14 50.95	11	−0.33	−45.36	48 21 13.7	53.9
Lalande 628	0 23 51.70	11	−0.35	−45.35	59 51 39.5	54.0
β Ceti	0 39 5.69	11	−0.34	−45.42	57 30 37.8	53.0

h 21.275 .... *dt* .... s −45.198

Hourly rate .... − 0.0487

Adopted Equator Point ....38° 56′ 53.59″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
20 44	29.885	64.8	64.3
21 37	29.885	62.9	62.5
22 36	29.885	61.9	60.3
23 35	29.885	60.3	59.5
0 39	29.885	59.6	58.9

Notes.

10. Bluish.
11. Reddish.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.337	20 30	......	......	......	+17.325	+17.422	+17.520
53	0.338	21 0	......	+16.799	+16.881	16.964	17.046	17.132
54	0.339	21 30	......	16.453	16.520	16.587	16.656	16.725
55	0.341	22 0	+16.045	16.097	16.149	16.201	16.254	16.306
56	0.342	22 30	15.706	15.742	15.776	15.812	15.846	15.883
57	−0.344	23 0	15.370	15.389	15.407	15.425	15.444	+15.460
		23 30	15.048	15.048	15.050	15.050	15.050	......
		0 0	14.742	14.726	14.709	14.690	14.672	......
		0 30	14.456	14.424	14.389	14.354	14.319	......
		1 0	+14.198	+14.149	+14.098	+14.046	+13.994	......

APPARENT RIGHT ASCENSION.	$D=$Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
20 30	.....	.....	.....	+ 3.82	+ 3.47	+ 3.11	73.25	74.58	77.34	80.22	83.27	86.46
21 0	.....	+ 7.00	+ 6.66	6.32	5.98	5.61	73.40	74.73	77.50	80.39	83.44	86.64
21 30	.....	9.48	9.16	8.82	8.48	8.16	73.55	74.89	77.66	80.56	83.62	86.82
22 0	+12.22	11.92	11.61	11.30	10.98	10.67	73.69	75.02	77.80	80.70	83.77	86.98
22 30	14.56	14.27	13.98	13.69	13.41	13.11	73.86	75.20	77.98	80.89	83.97	87.18
23 0	16.75	16.49	16.23	15.97	15.71	+15.45	73.94	75.28	78.07	80.98	84.06	87.28
23 30	18.78	18.55	18.33	18.09	17.87	.....	74.00	75.34	78.13	81.04	84.12	87.34
0 0	20.61	20.42	20.23	20.03	19.84	.....	74.05	75.39	78.18	81.10	84.18	87.40
0 30	22.20	22.05	21.90	21.74	21.58	.....	74.10	75.44	78.23	81.15	84.24	87.46
1 0	+23.55	+23.43	+23.32	+23.21	+23.08	.....	74.15	75.49	78.29	81.21	84.29	87.52

NEW OBJECT GLASS.

1894 OCTOBER 31. ZONE 74. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.1	4.3	6.2	8.1	10.1	12.4	[illegible]	54 38.28	56 42 10.0 11.5	I	46.480	20 54 0.67	−17 51 18.77	−18 5821
2	8.8	47.4	49.3	51.3	53.2	55.5	a	55 20.94	53 44 10.0 10.1	I	41.940	20 54 43.07	14 51 42.69	15 5859
3	7.8	23.4	25.4	27.6	29.8	32.1	c	4 27.66	55 56 10.0 10.3	III B	44.140	21 3 49.84	17 1 16.33	17 6193
4	9.0	7.0	9.3	11.3	13.1	15.0	e	5 41.20	55 26 10.0 11.9	VII	44.960	21 5 3.34	16 34 48.30	16 5811
5	8.9	42.5	44.6	46.7	49.0	51.0	c	29 46.76	55 54 10.0 11.3	III B	40.660	21 29 8.60	16 58 3.37	17 6314
6	8.8	47.1	49.1	51.4	53.6	55.7	c	30 51.38	55 54 " "	III A	45.425	21 30 13.21	17 6 2.84	17 6318
7	9.0	30.3	32.6	34.8	36.9	39.1	c	5 34.74	55 18 10.0 11.1	III	42.700	22 4 56.06	16 25 47.17	16 6034
8	8.1	7.5	9.7	11.8	14.0	16.2	c	12 11.84	53 58 10.0 10.4	III A	43.820	22 11 33.00	15 9 18.11	15 6180
9	8.6	48.4	50.3	52.2	54.1	56.3	a	13 21.88	53 58 " "	III B	34.540	22 12 43.01	14 59 51.60	15 6185
10	8.9	46.8	49.0	51.1	53.3	55.5	c	13 51.14	53 58 " "	III A	40.750	22 13 12.27	−15 8 18.94	−15 6189
11	9.0	16.5	18.5	20.4	22.4	24.6	a	25 50.01	53 14 10.0 9.2	I	45.830	22 25 10.96	−14 22 35.83	−14 6295
12	8.8	21.3	23.2	25.1	27.0	29.2	a	26 54.68	53 14 " "	I B	46.310	22 26 15.61	14 19 31.10	14 6299
13	9.0	54.5	56.6	58.7	1.0	3.2	c	26 58.80	55 58 10.0 10.8	V	47.920	22 26 19.83	17 7 27.61	17 6542
14	9 3	42.5	44.5	46.8	49.0	51.1	c	32 46.78	55 34 10.0 9.9	III	43.220	22 32 7.71	16 41 53.33	16 6118
15	9.0	16.1	18.1	20.3	22.3	24.5	c	40 20.26	53 0 10.0 9.7	III	44.260	22 39 40.99	14 8 5.58	14 6338
16	9.2	22.5	24.5	26.6	28.8	31.0	c	47 26.68	53 50 10.0 9.6	III	43.250	22 46 47.36	14 57 47.56	15 6286
17	8.8	54.6	56.7	58.7	1.0	3.1	c	48 58.82	55 38 10.0 10.6	III	44.680	22 48 19.52	16 46 20.25	17 6617
18	6.0	3.0	5.1	7.3	9.5	11.7	c	50 7.32	55 38 " "	III A	40.170	22 49 28.00	16 48 8.07	17 6619
19	7.8	39.9	41.8	43.7	45.7	48.0	a	5 13.45	53 54 10.0 9.0	I	47.670	23 4 33.90	15 3 9.06	15 6360
[illegible]	9.0	3.0	4.8	6.7	8.7	10.9	[illegible]	6 36.74	55 54 10.0 11.2	I	44.340	23 5 57.20	−17 2 11.68	−17 6691
21	8.9	12.6	14.3	16.4	18.4	20.5	a	7 46.51	56 46 10.0 12.3	I	43.140	23 7 6.96	−17 53 51.73	−18 6267
22	8.9	23.7	25.5	27.5	29.4	31.6	a	7 57.60	56 46 " "	III B	46.985	23 7 18.05	17 51 53.65	18 6268
23	8.9	19.3	21.1	23.1	25.1	27.4	a	8 53.27	56 46 " "	I	46.060	23 8 13.70	17 54 47.73	18 6271
24	9.0	8.8	10.7	12.6	14.6	16.7	a	9 42.75	56 46 " "	I	47.610	23 9 3.17	17 55 17.43	18 6274
25	9.1	7.0	8.8	10.7	12.8	15.0	a	10 40.82	56 4 10.0 11.8	I	48.030	23 10 1.21	17 13 23.12	17 6713
26	8.0	59.9	2.1	4.0	5.8	7.9	e	12 34.31	53 14 10.0 9.2	V	43.130	23 11 54.65	14 21 43.72	14 6437
27	6.5	18.0	20.1	22.1	24.5	26.7	c	13 22.28	53 14 " "	V	39.170	23 12 42.61	14 20 27.70	14 6441
28	9.0	12.6	14.9	16.8	18.6	20.6	e	13 47.06	53 14 " "	V A	46.210	23 13 7.38	14 25 57.16	14 6443
29	8.9	47.4	49.7	51.6	53.3	55.4	e	14 21.85	53 14 " "	VII A	42.100	23 13 42.17	14 24 39.82	14 6447
30	8.5	19.0	21.5	23.5	25.5	27.7	a	16 53.52	56 6 10.0 11.6	I	44.330	23 16 13.82	−17 14 11.96	−17 6733
31	9.3	44.4	46.3	48.3	50.3	52.5	a	17 18.32	56 6 " "	III	47.120	23 16 38.61	−17 15 7.43	−17 6737
32	9.1	35.1	36.9	38.9	40.9	43.1	a	18 8.71	54 40 10.0 11.2	I	48.010	23 17 28.99	15 49 18.27	16 6272
33	9.0	18.6	20.7	22.9	25.0	27.2	c	18 22.88	54 40 " "	III B	41.280	23 17 43.16	15 43 57.25	15 6408
34	8.6	15.5	17.5	19.3	21.3	23.6	a	19 49.50	56 44 10.0 11.1	III	43.840	23 19 9.77	17 52 6.09	18 6299
35	8.9	11.3	13.2	15.1	17.1	19.2	a	21 44.83	54 6 10.0 9.2	I A	38.400	23 21 5.06	15 15 25.78	15 6419
36	9.1	20.6	22.7	24.9	27.0	29.2	c	22 24.88	54 6 " "	III B	42.320	23 21 45.10	15 10 14.63	15 6423
37	9.2	52.6	54.4	56.5	58.5	0.7	a	26 26.27	54 40 10.0 10.0	I	47.640	23 25 46.45	15 49 10.45	16 6304
38	9.5	7.3	9.1	11.1	13.1	15.3	a	27 41.22	56 36 10.0 11.4	I	43.840	23 27 1.37	17 44 3.79	17 6766
39	8.2	40.2	42.1	44.1	46.0	48.3	a	28 14.12	56 16 10.0 12.6	III	41.890	23 27 34.26	17 23 27.92	17 6769
40	8.6	46.0	47.9	49.9	51.8	54.1	a	29 19.84	55 44 10.0 10.2	I	43.630	23 28 39.97	−16 51 56.59	−17 6774
41	9.2	38.1	39.9	42.0	44.0	46.1	a	30 12.00	56 16 10.0 11.1	I	42.590	23 29 32.12	−17 23 38.65	−17 6777
42	8.7	16.4	18.2	20.3	22.2	24.6	a	30 50.32	56 16 " "	I	47.530	23 30 10.43	17 25 13.49	17 6778
43	8.0	51.5	53.2	55.3	57.2	59.4	a	31 25.22	55 42 10.0 11.0	III	45.350	23 30 45.32	16 50 31.87	17 6780
44	9.1	8.0	9.9	11.9	13.9	16.1	a	32 41.98	56 24 10.0 11.2	I A	47.900	23 32 2.06	17 36 35.57	17 6781
45	9.3	48.6	50.6	52.8	55.1	57.4	c	32 52.90	56 24 " "	III B	37.650	23 32 12.98	17 26 52.46	17 6782
46	9.0	29.2	30.9	33.0	34.9	37.2	a	37 3.00	56 6 10.0 12.2	I	43.170	23 36 23.02	17 13 49.92	17 6797
47	8.9	0.9	2.7	4.6	6.6	8.8	a	37 34.61	55 40 10.0 10.9	I	47.560	23 36 54.62	16 49 12.28	17 6799
48	8.6	45.1	47.0	48.9	51.0	53.2	a	39 18.78	54 42 10.0 11.2	I	44.850	23 38 38.79	15 50 17.71	16 6352
49	8.9	27.2	29.3	31.5	33.7	35.8	c	39 31.50	55 4 10.0 11.7	V	46.960	23 38 51.50	16 13 3.18	16 6353
50	9.3	46.5	48.2	52.4	54.5	56.6	b_2 c_3	40 56.68	54 46 10.0 10.1	III	44.030	23 40 16.67	−15 54 3.60	−16 6356
51	8.1	28.0	30.1	32.4	34.6	36.8	c	41 32.38	54 32 10.0 9.9	V	47.910	23 40 52.36	−15 41 19.09	−15 6494
52	8.9	32.0	34.1	36.0	37.9	40.0	a	44 5.68	54 16 10.0 9.7	I	46.650	23 43 25.62	15 24 50.43	15 6500
53	9.0	8.8	10.7	12.6	14.6	16.9	a	44 42.41	54 16 " "	I A	47.880	23 44 2.34	15 28 28.60	15 6501
54	8.8	37.6	39.4	41.5	43.3	45.5	a	45 11.13	54 16 " "	I B	41.560	23 44 31.06	15 19 59.00	15 6502
55	6.8	24.3	26.1	28.0	29.9	32.2	a	45 57.74	54 0 10.0 10.0	I	44.480	23 45 17.66	15 8 8.29	15 6505
56	9.4	42.0	43.8	45.8	47.8	50.1	a	47 15.89	56 18 10.0 11.6	I	43.880	23 46 35.76	17 26 4.14	17 6832
57	9.0	47.2	49.0	51.0	53.1	55.2	a	48 21.06	56 8 10.0 10.4	I	44.580	23 47 40.92	17 16 16.53	17 6837
58	9.0	33.0	34.8	36.8	38.8	41.0	a	52 6.93	56 42 10.0 11.2	I	41.680	23 51 26.73	17 49 23.14	18 6403
59	9.3	13.4	15.4	17.7	19.9	22.1	c	52 17.70	55 48 10.0 10.6	III	46.220	23 51 37.51	16 56 49.25	17 6849
60	5.8	43.4	45.1	47.2	49.1	51.5	a	59 17.33	56 44 10.0 12.1	I	48.430	23 58 37.03	−17 53 33.67	−18 6417
61	7.3	18.9	20.7	22.7	24.6	26.9	a	59 52.69	55 56 10.0 11.3	I	46.910	23 59 12.39	−17 5 1.71	−17 6868
62	8.3	53.0	54.7	56.6	58.6	0.9	a	0 26.75	56 16 10.0 10.9	III	45.470	23 59 46.44	17 24 36.88	17 6870
63	9.1	26.8	28.7	30.7	32.7	34.9	a	2 0.73	56 10 10.0 11.3	I	42.590	0 1 20.40	17 17 39.64	17 6875
64	9.4	50.5	52.3	54.3	56.2	58.5	a	3 24.11	54 44 10.0 11.5	I	48.190	0 2 43.80	15 53 23.13	16 2
65	9.0	31.6	33.6	35.5	37.5	39.7	a	5 5.64	56 42 10.0 11.6	I	47.020	0 4 25.26	17 51 6.65	18 6
66	4.5	17.3	19.1	21.0	23.0	25.2	a	6 50.86	54 (52) 10.0 10.2	I	46.940	0 6 10.50	−16 0 59.12	−16 17

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°	
67	9.1	2.1	4.0	6.0	7.9	10.1	a	7 36.00	56 14 10.0 12.5	III	44.070	0 6 55.60	−17 22 11.19	−17	14
68	9.0	13.2	15.0	17.0	18.9	21.4	a	8 47.14	56 38 10.0 12.5	I B	45.630	0 8 6.71	17 43 26.65	17	16
69	8.1	38.3	39.8	44.3	46.4	48.8	$b_2 c_3$	8 48.61	56 38 " "	III B	48.800	0 8 8.18	17 44 29.48	17	17
70	8.9	29.1	30.8	32.9	34.9	37.1	a	10 3.01	56 38 " "	I	49.840	0 9 22.57	−17 48 1.38	−18	27
71	9.0	9.2	10.7	15.0	17.1	19.4	$b_2 c_3$	10 19.37	56 38 " "	III B	42.870	0 9 38.92	−17 42 35.77	−17	22
72	9.2	36.8	39.0	41.1	43.4	45.6	c	10 41.18	56 38 " "	V A	42.160	0 10 0.73	17 48 52.19	18	30
73	9.1	55.8	57.4	59.4	1.3	3.6	a	12 29.27	54 54 10.0 10.7	III	42.920	0 11 48.84	16 1 44.71	16	40
74	8.8	51.7	53.7	58.0	59.6	2.4	$c_4 d_3$	12 49.48	54 24 10.0 10.9	VI	46.850	0 12 9.06	15 33 1.41	15	44
75	9.5	34.3	36.1	38.0	40.0	42.3	a	18 8.17	56 32 10.0 12.0	I	44.030	0 17 27.61	17 40 10.03	17	43
76	9.3	34.7	36.2	40.5	42.6	44.9	$b_2 c_3$	18 44.86	56 14 10.0 12.8	III	47.380	0 18 4.30	17 23 15.83	17	48
77	9.3	14.3	16.1	18.0	19.9	22.2	a	19 48.08	56 14 " "	I	46.670	0 19 7.51	17 23 0.36	17	53
78	9.5	39.8	41.3	45.7	47.8	50.1	$b_2 c_3$	19 50.02	56 14 " "	III (B)	45.485	0 19 9.45	17 19 25.77	17	54
79	8.1	26.4	28.5	30.6	32.8	35.0	c	20 30.66	55 26 10.0 12.0	V	46.410	0 19 50.10	16 34 56.36	16	63
80	9.3	7.1	9.3	11.2	13.1	15.0	e	20 41.28	54 52 10.0 10.6	VII	43.080	0 20 0.74	−15 59 51.71	−16	64
81	8.7	14.4	16.6	18.5	20.3	22.3	e	22 48.73	53 40 10.0 10.7	VII	44.030	0 22 8.21	−14 48 6.93	−15	70
82	8.4	21.5	23.4	25.3	27.3	29.5	a	26 55.38	56 12 10.0 11.4	I	45.840	0 26 14.72	17 20 44.37	17	70
83	9.5	1.8	3.7	5.6	7.4	9.7	a	29 35.59	56 6 10.0 11.2	I B	45.700	0 28 54.90	17 11 27.76	17	77
84	9.4	13.6	15.4	17.3	19.3	21.5	a	29 47.39	56 6 " "	III A	40.950	0 29 6.69	17 16 26.87	17	78
85	9.5	15.2	17.4	19.5	23.9	25.3	$c_3 d_2$	30 15.18	56 32 10.0 12.5	V	43.950	0 29 34.46	17 40 13.78	17	81
86	8.1	20.4	22.0	26.3	28.3	30.7	$b_2 c_3$	31 30.61	56 2 10.0 10.8	III B	44.650	0 30 49.90	17 7 9.40	17	85
87	....	31.7	33.7	35.8	40.1	41.6	$c_3 d_2$	31 31.51	56 2 " "	V A	43.200	0 30 50.79	17 13 11.57	17	86
88	9.3	11.4	13.5	15.6	17.5	19.6	e	31 45.48	56 2 " "	VII	48.170	0 31 4.76	17 11 34.13	17	87
89	8.9	53.0	54.7	56.6	58.7	0.9	a	35 26.68	55 44 10.0 10.8	I	45.420	0 34 45.93	16 52 35.63	17	106
90	9.4	1.6	3.6	5.6	7.6	9.8	a	36 35.70	56 42 10.0 11.7	I	45.950	0 35 54.90	−17 50 49.34	−18	108
91	9.5	11.4	12.9	17.2	19.5	21.7	$b_2 c_3$	37 21.61	55 48 10.0 10.1	III	41.790	0 36 40.83	−16 55 28.03	−17	113
92	8.7	6.5	8.0	12.3	14.5	16.7	$b_2 c_3$	38 16.68	56 8 10.0 11.5	III	40.545	0 37 35.88	17 15 5.96	17	116
93	8.0	48.9	50.8	52.7	54.5	56.9	a	41 22.67	55 50 10.0 10.4	I	44.320	0 40 41.84	16 58 15.43	17	132
94	9.3	29.9	31.5	33.7	35.7	37.9	a	42 3.78	56 38 10.0 11.5	III	41.170	0 41 22.91	17 45 20.03	18	124
95	9.3	26.8	28.9	31.1	33.2	35.5	c	42 31.10	55 24 10.0 10.4	V	43.350	0 41 50.28	16 31 59.42	16	130
96	9.0	9.5	11.4	13.2	15.3	17.5	a	44 43.29	55 48 10.0 10.1	I	43.950	0 44 2.42	16 56 8.57	17	141
97	9.1	5.9	7.8	9.6	11.6	13.8	a	45 39.61	55 34 10.0 10.8	I	45.620	0 44 58.74	16 42 40.41	16	139
98	9.3	11.3	13.2	14.9	17.0	19.2	a	46 44.99	55 34 " "	I B	50.570	0 46 4.10	16 41 1.73	16	144
99	9.3	44.6	46.5	48.4	50.5	52.7	a	47 18.56	56 28 10.0 11.8	I	47.410	0 46 37.62	17 37 18.23	17	149
100	9.2	24.4	26.5	28.6	30.7	33.0	c	47 28.64	56 28 " "	III	46.610	0 46 47.70	−17 37 4.87	−17	150
101	9.3	48.9	50.7	52.7	54.7	56.8	a	49 22.55	55 4 10.0 10.6	I	41.700	0 48 41.66	−16 11 24.19	−16	151
102	8.9	43.0	44.5	48.8	50.8	53.0	$b_2 c_3$	49 53.09	55 50 10.0 10.2	III	45.540	0 49 12.15	16 58 41.98	17	157
103	8.0	21.9	23.8	25.7	27.7	30.0	■	50 55.82	56 22 10.0 11.6	III	44.700	0 50 14.85	17 30 28.36	17	159
104	8.2	29.1	31.0	33.2	35.5	37.6	c	51 33.28	56 42 10.0 11.0	III	46.290	0 50 52.28	17 50 59.72	18	152
105	9.0	54.0	55.3	59.8	1.8	4.0	$b_2 c_3$	57 4.05	55 38 10.0 10.0	III A	45.500	0 56 23.04	16 49 56.18	17	177
106	7.9	17.5	19.8	21.8	24.2	26.0	c	57 21.86	55 38 " "	V	49.750	0 56 40.84	16 48 5.07	17	180
107	9.2	9.0	11.1	13.3	15.4	17.6	c	58 13.28	55 38 " "	V B	36.910	0 57 32.26	16 40 44.97	16	170
108	9.4	28.6	30.9	33.0	35.2	37.5	c	59 33.04	56 36 10.0 11.7	V	43.780	0 58 51.95	17 44 14.71	17	188
109	9.5	50.8	52.6	54.6	56.6	58.7	a	1 24.60	56 0 10.0 10.4	I	44.000	1 0 43.52	−17 8 13.03	−17	190

Reduction Elements. Zone 74.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 31.3....	+0.002	−0.044	−0.270	−0.008	−0.114	−0.255
31.5....	−0.019	−0.183	−0.240			

REDUCTION OF THE DECLINATION OF THE ZERO STARS.

		ε Aquarii		ζ Capricorni		γ Capricorni		ι Aquarii		ι Ceti		Lalande 628	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		48 42 10.35		61 42 10.40		55 58 10.50		53 12 10.45		48 14 10.30		59 44 10.80	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	48.570	6 41.54	43.980	5 13.71	45.700	5 46.62	47.775	6 26.27	46.785	6 7.48		5 57.17
II	Red. to Mer......	.500	1.70	.940	1.57	.630	1.64	.720	1.67	.765	1.71		1.59
VI	Inclination	.350		.730		.490		.540		.530		46.120	2.20
VII	Refraction	.275	1 5.9	.725	1 47.3	.420	1 25.7	.475	1 17.5	.510	1 5.5	.100	1 40.1

		β Ceti		η Ceti	
		° ′ ″		° ′ ″	
CIRCLE READING.		57 24 10.85		49 34 10.00	
		r	′ ″	r	′ ″
I	Microm. Eq......		5 5.52	46.460	6 1.58
II	Red. to Mer......	43.560	1.64	.445	1.70
VI	Inclination	.390	0.88	.240	
VII	Refraction	.300	1 31.3	.215	1 8.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Aquarii	20 42 53.91	11	—0.28	—54.67	48 49 59.5	4.9
76 Draconis	20 51 2.65	11	+0.61	[—54.61]	316 48	...
ζ Capricorni	21 21 35.18	11	0.31	—54.74	61 49 13.0	4.8
γ Capricorni	21 35 11.20	11	—0.30	—54.65	56 5 24.5	5.2
ι Aquarii	22 1 40.95	11	—0.29	—54.71	53 19 55.9	5.3
ι Ceti	0 15 0.20	11	—0.28	—54.69	48 21 25.0	4.4
Lalande 628	0 24 0.97	8	—0.31	—54.70	59 51 51.9	4.9
β Ceti	0 39 15.01	11	—0.30	—54.79	57 30 51.2	5.0
43 H. Cephei	0 55 24.28	7	+1.33	[—54.93]	313 14	...
η Ceti	1 4 14.27	11	—0.28	—54.83	49 41 22.0	5.4

h 21.422 ....*dt*........................ —54.692 s

Hourly rate .... —0.0189

Adopted Equator Point..........38° 57′ 4″.99

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
20 42	29.645	50.2	48.4
21 35	29.675	49.4	48.1
22 50	29.695	48.1	47.3
23 58	29.725	45.8	44.5
1 0	29.735	45.2	44.1

Note.
48. Reddish.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					$D =$ Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	—0.289	20 30	+17.308	+17.404	+17.501	+17.598	+17.698	+4.09	+3.72	+3.38	+3.01	+2.66
54	0.291	21 0	16.969	17.051	17.134	17.217	17.304	6.47	6.12	5.76	5.41	5.05
55	0.293	21 30	16.611	16.679	16.749	16.817	16.887	8.85	8.50	8.15	7.80	7.45
56	0.296	22 0	16.243	16.295	16.350	16.402	16.455	11.21	10.87	10.52	10.19	9.85
57	—0.298	22 30	15.869	15.906	15.942	15.979	16.016	13.46	13.14	12.82	12.49	12.16
		23 0	15.497	15.515	15.534	15.554	15.572	15.59	15.30	15.00	14.69	14.40
		23 30	15.132	15.134	15.136	15.136	15.136	17.55	17.28	17.01	16.72	16.46
		0 0	14.782	14.766	14.748	14.731	14.715	19.34	19.09	18.84	18.60	18.36
		0 30	+14.450	+14.417	14.382	14.349	14.313	+20.88	+20.68	20.47	20.25	20.04
		1 0	......	......	+14.045	+13.993	+13.940	.....	.....	+21.82	+21.65	+21.47

APPARENT RIGHT ASCENSION.	R				
	53°	54°	55°	56°	57°
h m	″	″	″	″	″
20 30	76.38	79.21	82.17	85.29	88.55
21 0	76.47	79.30	82.26	85.39	88.65
21 30	76.56	79.40	82.36	85.49	88.76
22 0	76.63	79.47	82.43	85.57	88.84
22 30	76.70	79.54	82.51	85.64	88.92
23 0	76.81	79.65	82.62	85.76	89.04
23 30	77.05	79.91	82.89	86.04	89.33
0 0	77.27	80.13	83.12	86.28	89.58
0 30	77.30	80.17	83.16	86.32	89.62
1 0	77.34	80.20	83.20	86.36	89.66

1894 NOVEMBER 1. ZONE 75. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.3	42.3	44.2	46.2	48.2	50.4	a	3 16.20	55 58 10.0 11.9	I	48.050	21 2 37.71	—17 7 44.78	—17 6189
2	8.2	6.1	8.0	10.0	11.9	14.1	a	6 39.74	54 36 10.0 11.3	I	42.670	23 5 59.44	15 43 36.46	15 6365
3	8.7	0.9	3.1	5.2	7.5	9.7	c	7 5.28	56 18 10.0 12.5	III	45.560	23 6 24.99	17 26 39.28	17 6694
4	8.7	51.7	53.4	55.4	57.3	59.6	a	10 25.20	54 34 10.0 11.0	I	41.510	23 9 44.84	15 41 13.81	15 6376
5	7.9	13.2	15.0	16.9	18.8	21.1	a	10 46.56	53 26 10.0 10.5	III	42.825	23 10 6.18	14 33 37.77	14 6429
6	9.0	46.7	48.8	51.2	53.2	55.4	c	10 51.06	55 52 9.5 10.5	V	41.990	23 10 10.70	16 59 29.82	17 6714
7	7.7	......	......	......	......	......	......	....	55 12 10.0 12.5	III	42.875	23 14 26	16 19 44.28	16 6259
8	8.7	22.2	23.9	26.0	27.9	30.2	a	26 55.69	54 10 10.0 10.5	I B	44.290	23 26 15.10	15 14 51.61	15 6443
9	8.4	9.1	11.3	13.4	15.6	17.8	c	27 13.44	54 10 " "	III A	44.790	23 26 32.85	15 21 31.42	15 6444
10	9.1	19.9	21.8	23.8	25.7	28.0	a	29 53.87	56 28 10.0 12.5	I A	45.680	23 29 13.24	—17 39 54.10	—17 6775

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
11	8.0	59.5	1.5	3.8	6.0	8.4	c	30 3.84	56 28 10.0 12.5	III B	44.160	23 29 23.20	−17 32 58.54	−17 6776
12	7.7	52.1	54.2	56.5	58.6	0.8	c	30 56.44	56 0 10.0 12.1	III	44.000	23 30 15.79	17 8 7.72	17 6779
13	9.0	36.2	38.0	40.0	42.0	44.1	a	32 9.91	55 28 10.0 11.8	I	43.740	23 31 29.24	16 35 59.08	16 6323
14	9.1	31.0	32.8	34.7	36.7	39.0	a	37 4.63	55 2 10.0 11.0	III	(45).860	23 36 23.90	16 10 40.15	16 6336
15	8.8	23.8	25.9	28.1	30.2	32.6	c	37 28.12	54 52 10.0 12.2	V	47.000	23 36 47.38	16 1 3.89	16 6341
16	6.0	53.5	55.7	57.9	0.0	2.1	c	37 57.84	54 52 “ “	V	44.085	23 37 17.10	16 0 7.98	16 6345
17	9.1	48.6	50.5	52.5	54.5	56.7	a	39 22.46	55 44 10.0 12.0	I	47.400	23 38 41.69	16 53 10.27	17 6806
18	9.3	19.1	21.3	23.6	25.7	28.0	c	39 23.54	56 14 10.4 13.2	V	45.430	23 38 42.77	17 22 38.46	17 6807
19	8.5	6.7	9.1	11.0	12.9	14.8	e	39 41.36	52 36 10.0 12.1	VII	45.920	23 39 0.61	13 44 38.85	13 6457
20	8.9	53.4	55.1	57.1	59.1	1.2	a	44 26.76	53 34 10.6 11.6	I	46.690	23 43 45.94	−14 42 50.92	−14 6553
21	9.4	2.7	4.5	6.5	8.5	10.7	a	47 36.12	53 16 10.0 12.1	III	46.610	23 46 55.26	−14 24 50.60	−14 6564
22	9.4	46.3	48.5	50.7	55.0	56.5	$c_3\,d_2$	47 46.35	55 20 13.0 10.9	VI B	43.120	23 47 5.48	16 24 38.86	16 6379
23	9.0	44.7	......	49.2	51.3	53.5	c	48 49.12	55 20 “ “	V A	50.330	23 48 8.22	16 33 24.69	16 6381
24	9.1	17.6	19.2	21.5	25.9	27.5	$c_3\,d_2$	49 17.29	55 20 “ “	VI B	45.120	23 48 36.40	16 25 17.31	16 6383
25	9.0	40.9	42.8	44.8	46.7	48.9	a	59 14.39	53 30 10.0 10.1	I	45.740	23 58 33.38	14 38 32.09	14 6609
26	8.9	19.9	21.8	23.7	25.7	27.9	(a)	59 53.62	55 18 10.0 11.1	III B	44.940	23 59 12.58	16 23 10.30	16 6410
27	8.6	6.1	8.3	10.5	12.6	14.9	c	0 10.48	55 18 “ “	III	45.975	23 59 29.42	16 26 44.00	16 6411
28	9.0	23.9	25.7	27.6	29.6	31.9	a	1 57.65	55 50 10.0 12.0	I	46.170	0 1 16.56	16 58 47.89	17 6874
29	8.4	7.9	9.8	11.7	13.6	15.9	a	2 41.62	55 16 10.0 12.1	I	44.900	0 2 0.54	16 24 21.96	16 6419
30	9.0	11.2	13.1	15.0	16.9	19.2	a	3 44.88	55 6 10.0 12.6	I	47.060	0 3 3.78	−16 15 3.27	−16 6
31	9.1	35.3	37.0	39.0	41.0	43.2	a	5 8.91	55 8 10.0 12.0	I	45.220	0 4 27.80	−16 16 27.85	−16 11
32	8.9	21.1	23.0	24.9	26.8	29.2	a	5 54.97	56 12 10.0 12.2	I	44.395	0 5 13.82	17 20 15.28	17 10
33	8.9	38.0	40.2	42.4	44.5	46.7	c	7 42.36	55 16 10.0 12.1	III	43.250	0 7 1.22	16 23 52.63	16 20
34	9.3	36.6	38.4	40.4	42.4	44.6	a	9 10.28	55 8 10.0 11.6	I	43.710	0 8 29.12	16 15 58.98	16 29
35	9.4	48.8	50.8	52.6	54.6	56.7	a	10 22.53	55 24 10.0 11.7	I B	37.870	0 9 41.34	16 26 53.98	16 34
36	8.7	26.7	28.3	32.4	34.6	36.8	$b_2\,c_3$	10 36.82	55 24 “ “	III A	48.060	0 9 55.63	16 36 39.79	16 37
37	8.9	13.4	15.2	17.2	19.2	21.4	a	11 46.92	53 58 10.0 11.0	III A	42.520	0 11 5.75	15 8 49.24	15 36
38	8.0	50.3	52.4	54.5	56.6	58.8	c	11 54.52	53 58 “ “	V B	40.315	0 11 13.35	15 1 40.43	15 38
39	9.0	1.8	3.7	5.6	7.6	9.8	a	14 35.55	55 24 10.0 11.8	I	47.330	0 13 54.30	16 33 9.78	16 45
40	8.7	49.0	50.6	54.8	56.8	59.2	$b_2\,c_3$	14 59.11	54 16 10.0 11.5	III	41.460	0 14 17.89	−15 23 15.77	−15 52
41	9.4	36.8	39.0	41.1	43.4	45.6	c	15 41.18	55 38 10.0 11.9	V A	42.670	0 14 59.91	−16 48 59.27	−17 38
42	9.1	28.1	29.6	33.8	35.9	38.2	$b_2\,c_3$	16 38.18	55 38 “ “	III B	36.980	0 15 56.90	16 40 40.20	16 52
43	8.0	2.7	4.3	8.5	10.6	12.9	$b_2\,c_3$	17 12.87	55 38 “ “	III	42.780	0 16 31.58	16 45 45.38	17 42
44	9.0	1.9	3.8	5.8	7.7	10.0	a	18 35.66	55 18 10.0 11.2	I	41.240	0 17 54.36	16 25 12.67	16 57
45	6.8	31.0	32.7	37.0	39.0	41.3	$b_2\,c_3$	18 41.26	55 18 “ “	III A	45.620	0 17 59.96	16 29 53.18	16 58
46	8.8	42.2	44.1	46.0	48.0	50.1	a	20 15.89	55 10 10.0 12.0	I	42.175	0 19 34.58	16 17 30.81	16 61
47	9.1	41.7	43.6	45.7	47.4	49.7	a	21 15.44	55 10 “ “	I A	42.010	0 20 34.12	16 20 42.28	16 67
48	9.0	39.5	41.6	43.9	46.1	48.2	c	21 43.86	55 10 “ “	III B	45.970	0 21 2.54	16 15 31.94	16 68
49	9.3	52.8	54.6	56.7	58.6	0.7	a	23 26.68	56 22 10.3 12.9	I	44.160	0 22 45.29	17 30 13.37	17 62
50	9.0	41.6	43.5	45.5	47.5	49.6	a	24 15.43	55 38 10.0 12.2	I	44.800	0 23 34.05	−16 46 23.07	−17 63
51	6.2	55.5	57.3	59.4	1.2	3.4	a	25 29.03	54 16 10.0 11.0	I	46.840	0 24 47.69	−15 24 57.87	−15 84
52	9.4	49.3	51.2	53.0	55.1	57.2	a	26 22.97	55 10 10.0 11.7	I	42.570	0 25 41.58	16 17 38.93	16 82
53	9.1	47.2	49.0	51.0	53.0	55.2	a	27 20.90	55 10 “ “	I A	42.210	0 26 39.50	16 20 46.64	16 85
54	9.1	43.5	45.3	47.3	49.1	51.4	a	28 17.01	54 20 10.0 12.0	I	41.120	0 27 35.62	15 27 9.11	15 95
55	9.3	47.7	49.4	51.5	53.4	55.6	a	29 21.12	53 42 10.0 11.3	I	44.940	0 28 39.74	14 50 20.48	15 98
56	9.2	17.4	19.6	21.7	24.0	26.3	c	29 21.80	53 42 “ “	III A	43.130	0 28 40.42	14 53 2.14	15 99
57	9.0	29.6	31.4	33.3	35.3	37.6	a	31 3.30	55 28 10.0 12.5	I A	42.540	0 30 21.83	16 38 54.68	16 98
58	8.9	58.5	0.4	2.4	4.3	6.5	a	31 32.26	55 28 “ “	I B	39.270	0 30 50.79	16 31 23.62	16 101
59	8.0	18.0	19.9	21.9	23.9	26.1	a	33 51.85	55 38 10.0 12.0	I A	38.720	0 33 10.34	16 47 41.96	17 98
60	8.8	49.8	51.6	53.5	55.5	57.9	a	34 23.45	55 4 10.0 12.2	III	46.090	0 33 41.97	−16 12 49.35	−16 109
61	8.9	36.5	38.2	40.2	42.0	44.4	a	35 9.76	53 2 10.0 10.5	III	44.320	0 34 28.34	−14 10 9.10	−14 107
62	8.9	16.8	18.9	21.0	23.3	25.4	c	36 21.08	54 44 10.0 11.5	III	45.020	0 35 39.58	15 52 27.75	16 115
63	9.5	44.5	46.7	48.8	51.0	53.0	c	37 48.80	54 44 “ “	III A	41.390	0 37 7.28	15 54 32.73	16 117
64	8.4	55.6	57.6	59.6	1.5	3.7	a	39 29.50	55 44 10.0 11.4	I	42.270	0 38 47.92	16 51 36.30	17 120
65	8.9	49.8	51.7	53.7	55.8	58.0	a	40 23.55	54 48 10.0 11.5	I	43.690	0 39 42.00	15 56 1.02	16 126
66	9.3	39.6	41.5	43.3	45.4	47.6	a	41 13.14	54 8 10.0 11.9	I	45.115	0 40 31.61	15 16 26.85	15 136
67	9.3	12.6	14.4	16.3	18.2	20.5	a	42 46.15	54 48 10.0 12.1	I	42.660	0 42 4.56	15 55 41.87	16 132
68	8.1	41.1	42.9	44.8	46.9	49.0	a	44 14.60	54 10 10.0 11.0	I	42.940	0 43 33.03	15 17 45.17	15 146
69	8.8	47.1	49.0	50.9	52.9	55.0	a	45 20.73	54 48 10.0 11.4	I	44.880	0 44 39.12	15 56 24.52	16 137
70	8.7	53.3	55.0	57.1	59.0	1.1	a	46 26.77	54 14 10.0 11.0	III	46.400	0 45 45.17	−15 22 54.02	−15 152
71	9.0	41.6	43.7	45.7	48.0	50.2	c	47 45.84	54 14 “ “	V A	39.250	0 47 4.23	−15 23 53.16	−15 158
72	8.1	17.9	20.3	22.2	24.0	26.0	e	47 52.24	54 44 10.0 12.0	VII	44.110	0 47 10.60	15 52 15.51	16 148
73	8.6	36.8	39.1	41.0	43.0	44.8	e	49 11.17	54 16 10.0 11.1	VII	42.300	0 48 29.54	15 23 39.25	15 160
74	8.7	6.6	8.9	10.8	12.7	14.8	e	49 41.02	54 2 10.0 10.8	VII	44.720	0 48 59.39	15 10 24.98	15 163
75	8.7	42.2	44.0	45.9	47.9	50.1	a	53 15.70	54 16 10.0 12.0	III	46.630	0 52 34.02	15 25 0.08	15 175
76	9.0	58.1	59.9	1.8	3.7	5.9	a	54 31.53	54 6 10.0 11.5	I	41.540	0 53 49.85	15 13 19.97	15 178
77	9.5	37.6	39.4	41.3	43.2	45.6	a	55 11.31	55 38 10.0 12.5	III	44.940	0 54 29.54	16 46 32.16	17 172
78	......	21.0	22.8	24.9	26.8	29.0	a	0 54.59	54 18 11.3 13.1	I	45.070	1 0 12.82	15 26 30.82	15 194
79	9.3	57.6	59.5	1.4	3.4	5.7	a	1 31.20	54 18 “ “	III	40.840	1 0 49.43	15 25 11.68	15 199
80	7.7	55.6	57.5	59.4	1.3	3.5	a	2 29.23	54 54 10.0 11.5	III	45.490	1 1 47.40	−16 2 41.37	−16 177
81	9.4	21.6	23.8	28.0	29.6	32.5	$c_4\,d_3$	3 19.46	55 36 10.0 12.0	VI	42.250	1 2 37.59	−16 43 44.21	−16 182
82	8.9	9.7	11.9	14.0	18.4	19.8	$c_3\,d_2$	4 9.73	54 34 10.0 10.6	V	45.540	1 3 27.90	−15 42 42.96	−15 206

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°	
83	9.4	9.5	11.3	13.3	15.3	17.5	a	5 43.14	54 50 10.0 12.3	III	48.000	1 5 1.28	−15 59 30.33	−16	189
84	7.0	5.3	7.3	9.6	11.8	13.9	c	6 9.58	55 42 10.0 12.1	V	44.140	1 5 27.67	16 50 20.54	17	204
85	8.6	34.4	36.5	38.6	40.9	43.0	c	7 38.68	55 28 10.0 12.5	III	44.470	1 6 56.77	16 36 24.89	16	195
86	8.5	0.7	2.3	4.4	6.4	8.5	a	9 34.20	54 44 10.0 12.2	I	44.110	1 8 52.32	15 52 14.11	16	200
87	9.3	51.1	53.2	55.4	57.6	59.8	c	9 55.42	54 28 10.0 11.5	V B	43.570	1 9 13.55	15 32 52.61	15	230
88	8.5	51.4	53.6	55.9	58.0	0.2	c	10 55.82	54 28 “ “	III A	47.970	1 10 13.93	15 40 43.77	15	233
89	9.2	2.1	3.9	5.9	7.9	10.2	a	12 35.64	54 0 10.0 11.0	I	45.820	1 11 53.76	15 8 44.88	15	238
90	9.5	52.0	53.9	55.9	57.7	59.9	a	13 25.69	55 12 10.7 13.5	I	43.410	1 12 43.72	−16 20 3.81	−16	215
91	9.1	25.0	27.0	28.9	31.0	33.0	a	14 58.62	54 0 10.0 11.0	I	45.410	1 14 16.71	−15 8 37.50	−15	245
92	7.6	11.0	12.9	14.9	16.9	18.9	a	15 44.73	55 12 10.0 12.5	III	43.710	1 15 2.74	16 20 11.16	16	223
93	9.0	31.0	32.8	34.8	36.8	39.0	a	17 4.62	54 44 10.0 11.1	I	44.150	1 16 22.64	15 52 15.87	16	226
94	9.0	7.6	9.1	13.3	15.5	17.6	b_2 c_3	35 17.64	54 4 10.0 10.5	III	45.660	1 34 35.53	15 12 48.74	15	293
95	8.5	5.1	6.9	8.8	10.7	13.0	a	36 38.58	54 14 10.0 11.7	I	48.960	1 35 56.44	15 23 51.53	15	297
96	9.4	50.3	52.0	54.0	56.0	58.3	a	37 23.76	54 0 10.0 11.0	III	41.950	1 36 41.63	15 7 38.11	15	299
97	8.0	17.1	18.9	20.9	22.9	25.1	a	38 50.61	53 53 10.0 11.0	I	42.440	1 38 8.48	15 0 45.59	15	304
98	8.9	2.8	4.4	8.5	10.8	......	b_2 c_2	39 12.88	53 4 10.0 11.0	III	43.710	1 38 30.80	14 12 9.79	14	323
99	9.1	33.3	35.3	37.5	39.7	41.8	c	44 37.52	54 50 10.0 11.5	V	43.900	1 43 55.26	15 58 21.74	16	308
100	9.4	14.6	17.0	18.9	20.8	22.7	e	44 48.96	54 50 “ “	V B	44.850	1 44 6.70	−15 55 26.18	−16	309
101	8.9	49.5	51.5	53.8	55.9	58.0	c	45 53.74	55 8 10.0 11.6	V	42.810	1 45 11.44	−16 16 2.07	−16	314
102	9.0	43.3	45.1	47.0	48.9	51.2	a	47 16.92	55 16 10.2 13.0	III	45.090	1 46 34.60	16 24 45.67	16	319
103	8.9	2.5	4.7	6.9	9.0	11.2	c	48 6.86	54 18 10.0 11.1	V	45.090	1 47 24.61	15 26 43.74	15	331
104	8.8	2.3	4.5	6.8	8.8	11.0	c	49 6.68	54 32 10.5 11.8	III	44.530	1 48 24.40	15 40 32.76	15	337
105	9.0	3.6	5.7	8.0	10.2	12.3	c	50 7.96	54 10 10.0 10.3	III	43.290	1 49 25.70	15 18 7.20	15	342
106	9.1	2.7	4.9	7.0	9.4	11.4	c	51 7.08	54 52 10.0 11.9	V	47.400	1 50 24.74	16 1 30.91	16	332
107	9.0	0.0	2.0	4.4	6.6	8.7	c	52 4.34	55 6 10.0 12.1	V	46.790	1 51 21.98	16 15 20.27	16	337
108	8.2	52.5	54.6	56.9	58.9	1.0	c	53 56.78	54 6 10.0 11.5	III	47.870	1 53 14.49	15 15 36.53	15	352
109	7.8	6.5	8.5	10.6	14.9	16.5	c_3 d_2	55 6.37	54 28 10.0 10.8	VI	44.070	1 54 24.04	15 36 27.18	15	354
110	9.2	6.8	8.8	11.2	13.3	15.4	c	56 11.10	55 38 10.0 11.4	V A	44.410	1 55 28.66	−16 49 51.36	−17	366
111	9.3	27.9	30.1	32.4	34.5	36.6	c	57 32.30	55 38 “ “	III B	42.410	1 56 49.84	−16 42 43.39	−16	352
112	6.3	18.5	20.4	22.3	24.1	26.4	a	58 52.07	54 40 10.0 11.7	I	40.430	1 58 9.68	15 47 14.88	16	356
113	9.4	0.2	1.7	6.0	8.2	10.4	b_2 c_3	59 10.34	54 40 “ “	III B	40.330	1 58 27.96	15 44 1.19	15	360
114	8.0	20.0	21.9	23.9	25.8	28.0	a	0 53.70	55 2 10.0 12.0	III	40.580	2 0 11.26	16 9 21.53	16	365
115	9.6	24.0	26.1	28.2	30.3	32.5	c	1 28.22	55 2 “ “	V B	36.870	2 0 45.78	16 4 58.41	16	366
116	7.8	47.8	49.9	52.2	54.4	56.6	c	2 52.18	55 2 “ “	III A	35.060	2 2 9.72	16 10 50.63	16	374
117	9.0	0.3	2.6	4.5	6.4	8.3	e	4 34.64	54 16 10.0 10.7	V A	41.400	2 3 52.24	15 26 51.61	15	373
118	8.0	36.2	38.4	40.7	42.7	45.0	c	5 40.60	54 16 “ “	III B	44.810	2 4 58.20	15 21 27.39	15	377
119	8.0	46.9	49.0	51.2	53.5	55.6	c	6 51.24	54 38 10.0 11.0	III	46.240	2 6 8.78	15 47 10.21	16	389
120	8.9	54.6	56.7	59.0	1.0	3.3	c	11 58.92	55 56 10.0 11.7	III	44.490	2 11 16.31	−17 4 42.44	−17	433
121	9.4	54.0	56.1	58.4	0.6	2.7	c	12 58.36	54 48 10.0 11.6	III	43.730	2 12 15.84	−15 56 24.66	−16	417
122	9.3	27.8	29.7	31.6	33.6	35.8	a	14 1.46	54 48 “ “	III A	41.900	2 13 18.92	15 59 4.34	16	422
123	9.1	30.3	32.2	34.0	36.1	38.4	a	15 3.79	53 40 10.0 11.3	III (B)	46.600	2 14 21.36	14 46 3.17	14	426
124	9.1	8.0	9.9	11.8	13.7	15.9	a	15 41.45	53 40 “ “	III	42.125	2 14 59.01	14 47 51.29	15	400
125	8.0	58.5	0.7	2.8	4.9	7.1	c	16 2.80	53 40 “ “	III A	46.760	2 15 20.35	14 52 34.82	15	401
126	8.8	9.0	11.5	13.4	15.2	17.2	e	16 43.44	54 34 10.0 11.0	V	47.290	2 16 0.91	15 43 34.91	15	406
127	8.3	1.4	3.7	5.5	7.4	9.4	e	17 35.59	55 4 10.0 11.3	V	46.730	2 16 53.00	16 13 26.08	16	432
128	8.1	48.8	51.0	53.0	54.9	56.8	e	18 23.09	54 32 10.0 11.8	VII	47.080	2 17 40.55	15 41 33.29	15	414
129	9.5	49.6	51.8	54.0	56.1	58.3	c	19 53.96	55 10 10.0 12.0	V	46.860	2 19 11.34	16 19 29.97	16	437
130	9.1	13.5	15.6	17.8	20.0	22.2	c	26 17.82	55 46 10.0 12.0	V	42.010	2 25 35.10	−16 54 0.79	−17	481
131	8.2	27.7	29.6	31.5	33.5	35.7	a	30 1.45	55 26 10.0 12.6	III	42.800	2 29 18.72	−16 34 14.70	−16	461
132	8.2	32.5	34.3	36.2	38.1	40.4	a	31 6.01	54 28 10.0 11.4	III	46.590	2 30 23.38	15 37 24.26	15	456
133	9.0	17.8	19.4	21.5	23.5	25.6	a	31 51.27	54 28 “ “	I A	46.710	2 31 8.63	15 40 39.40	15	459
134	8.7	7.7	9.5	11.5	13.4	15.7	a	32 41.27	54 28 “ “	I	49.170	2 31 58.63	15 38 12.38	15	462
135	9.3	50.5	52.4	54.4	56.4	58.5	a	33 24.13	54 20 10.6 12.0	III	43.950	2 32 41.50	15 28 34.59	15	463
136	8.9	34.3	36.0	38.0	40.0	42.2	a	35 7.78	54 16 10.0 11.4	I	46.900	2 34 25.14	15 25 29.08	15	466
137	9.4	4.3	6.2	8.1	10.0	12.3	a	35 37.87	54 16 “ “	I A	45.240	2 34 55.22	15 28 11.89	15	468
138	9.3	49.5	51.5	53.5	55.4	57.5	a	37 23.23	54 46 10.6 12.5	I	46.730	2 36 40.52	15 55 28.88	16	489
139	6.8	28.3	30.5	32.5	36.8	38.4	c_3 d_2	37 28.28	54 22 10.0 11.5	V	47.020	2 36 45.61	15 31 36.22	15	477
140	8.5	37.7	40.0	41.9	43.7	45.8	e	41 11.99	54 42 9.2 10.5	V	45.020	2 40 29.26	−15 50 59.21	−16	498
141	9.2	26.7	29.0	30.8	32.8	34.8	e	42 1.02	54 34 10.0 10.6	VII B	35.520	2 41 18.32	−15 36 44.96	−15	489
142	8.2	17.9	20.1	22.0	23.9	25.9	e	42 52.15	54 34 “ “	VII	42.830	2 42 9.42	15 42 19.37	15	491
143	8.8	56.5	58.3	0.2	2.2	4.4	a	45 30.22	55 46 10.0 11.7	I	41.570	2 44 47.35	−16 53 55.08	−17	544

Reduction Elements. Zone 75.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 1.3....	+0.073	−0.090	−0.200	+0.075	−0.098	−0.204
1.5....	+0.077	−0.105	−0.209			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ν Aquarii		γ Capricorni		h Aquarii		b^1 Aquarii		Mayer 986		ρ Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	50 38 11.10		55 58 10.80		47 6 10.80		59 30 11.20		49 24 11.15		51 36 11.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	45.135	5 36.17	45.660	5 45.62	44.775	5 28.87	45.550	5 44.06	44.395	5 21.48	44.395	5 21.13
II Red. to Mer.	.115	1.69	.590	1.64	.735	1.72	.510	1.59	.335	1.70	.300	1.68
VI Inclination	44.940		.430		.540		.350		.135		.120	
VII Refraction	.870	1 10.2	.350	1 25.3	.485	1 2.3	.295	1 38.2	.130	1 7.7	.110	1 13.6

	σ Ceti		π Ceti	
	° ′ ″		° ′ ″	
CIRCLE READING.	54 32 10.65		53 8 10.60	
	r	′ ″	r	′ ″
I Microm. Eq.	45.500	5 42.33	45.235	5 37.60
II Red. to Mer.	.430	1.65	.165	1.67
VI Inclination	.215		.000	
VII Refraction	.200	1 21.9	44.955	1 17.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ν Aquarii	21 4 47.75	11	−0.15	−55.54	50 44 59.2	4.2
γ Capricorni	21 35 11.99	11	−0.16	−55.60	56 5 23.4	4.0
h Aquarii	23 0 37.25	11	−0.14	−55.64	47 12 43.7	4.0
b^1 Aquarii	23 18 23.59	3	−0.16	−55.56	59 37 35.0	4.6
γ Cephei	23 35 58.04	6	+0.55	[−55.59]	321 54	...
Mayer 986	23 45 45.79	11	−0.15	−55.57	49 30 42.0	4.2
α Ursae Minoris	1 21 42.10	5	+7.69	[−55.57]	310 12	...
ρ Ceti	2 21 49.42	11	−0.15	−55.75	51 42 47.7	4.5
σ Ceti	2 28 3.45	11	−0.15	−55.73	54 39 16.5	4.0
π Ceti	2 40 4.36	11	−0.15	−55.80	53 15 7.7	4.0
τ^2 Eridani	2 47 13.51	11	−0.16	−55.76	60 20	...

h 21.000 .... *dt* .... s −55.529

Hourly rate .... − 0.0396

Adopted Equator Point .... 38° 57′ 4″.19

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
21 5	29.985	58.0	56.2
21 38	29.975	57.0	55.2
23 1	29.975	54.8	53.2
23 51	29.985	54.0	51.9
0 57	29.985	53.0	50.5
1 52	29.985	52.0	50.0
2 46	29.985	51.6	49.2

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	−0.150	21 0	......	......	......	+17.146	+17.228	......
53	0.152	21 30	......	......	......	16.757	16.826	......
54	0.153	23 0	......	+15.502	+15.521	15.540	15.558	+15.578
55	0.155	23 30	+15.134	15.135	15.138	15.138	15.140	15.140
56	0.156	0 0	+14.799	14.784	14.768	14.751	14.733	14.716
57	−0.157	0 30	......	14.450	14.417	14.382	14.349	+14.311
		1 0	......	14.142	14.092	14.041	13.989	......
		1 30	......	13.863	13.798	13.731	13.663	......
		2 0	......	13.621	13.540	13.459	13.375	......
		2 30	......	+13.417	13.324	13.229	13.133	......
		3 0	......	......	+13.152	+13.044	+12.937	......

APPARENT RIGHT ASCENSION.	$D=$ Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
21 0	.....	.....	.....	+ 5.74	+ 5.39	.....	74.71	76.07	78.89	81.83	84.94	88.19
21 30	.....	.....	.....	8.14	7.79	.....	74.83	76.19	79.01	81.96	85.07	88.33
23 0	.....	+15.54	+15.24	14.94	14.62	+14.33	75.18	76.54	79.38	82.34	85.47	88.74
23 30	+17.78	17.51	17.23	16.95	16.67	16.39	75.32	76.68	79.52	82.49	85.62	88.90
0 0	+19.51	19.26	19.02	18.77	18.51	18.26	75.42	76.79	79.63	82.60	85.74	89.02
0 30	.....	20.81	20.59	20.38	20.16	+19.94	75.53	76.90	79.74	82.72	85.86	89.15
1 0	.....	22.09	21.90	21.73	21.55	.....	75.60	76.97	79.82	82.79	85.94	89.23
1 30	.....	23.11	22.96	22.83	22.69	.....	75.67	77.04	79.89	82.87	86.02	89.31
2 0	.....	23.82	23.72	23.62	23.52	.....	75.72	77.09	79.95	82.93	86.08	89.37
2 30	.....	+24.23	24.17	24.12	24.06	.....	75.79	77.16	80.02	83.00	86.16	89.45
3 0	.....	.....	+24.32	+24.30	+24.29	.....	75.86	77.23	80.09	83.08	86.24	89.54

1894 NOVEMBER 12. ZONE 76 CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.1	40.6	42.7	44.9	47.1	49.2	c	6 44.90	55 20 10.0 12.0	III A 47.200	23 5 53.69	—16 32 25.62	—16 6231
2	8.8	47.0	49.1	51.3	53.5	55.7	c	7 51.32	55 20 " "	III B 41.470	23 7 0.09	16 24 7.30	16 6238
3	8.9	14.9	16.9	19.1	21.2	23.4	c	10 19.10	53 54 10.0 11.0	III B 45.825	23 9 27.82	14 59 26.22	15 6374
4	8.8	1.9	4.1	6.3	8.4	10.6	c	11 6.26	53 54 " "	III A 43.290	23 10 14.97	15 5 5.83	15 6380
5	8.9	4.8	6.9	9.1	11.3	13.5	c	12 9.12	53 54 " "	III 44.120	23 11 17.81	15 2 7.25	15 6383
6	8.7	8.8	10.5	12.5	14.4	16.8	a	14 42.08	52 52 10.0 11.5	I 43.780	23 13 50.73	13 59 56.21	14 6448
7	6.5	32.2	33.9	38.1	40.2	42.4	b_2 c_3	14 42.36	52 52 " "	III 44.430	23 13 51.01	14 0 10.61	14 6448
8	8.5	12.7	15.0	17.2	19.4	21.5	c	15 17.16	55 12 10.0 12.1	V 42.610	23 14 25.83	16 19 44.10	16 6259
9	8.7	0.5	2.6	4.6	6.8	8.9	c	17 4.68	53 4 10.0 11.3	III 44.920	23 16 13.30	14 12 20.35	14 6455
10	9.2	42.6	44.5	46.4	48.4	50.6	a	19 16.13	53 54 10.0 11.2	I 41.855	23 18 24.73	—15 1 21.70	—15 6411
11	8.2	13.6	15.6	17.9	20.0	22.2	c	19 17.86	53 54 " "	III 44.830	23 18 26.46	—15 2 20.71	—15 6412
12	9.3	58.4	0.1	2.0	4.0	6.2	a	21 31.75	53 46 10.0 11.4	I 45.095	23 20 40.32	14 54 23.56	15 6416
13	9.3	55.2	57.4	59.6	1.7	3.9	c	21 59.56	53 2 10.0 11.6	III 45.230	23 21 8.12	14 10 26.22	14 6471
14	9.1	32.7	34.7	36.9	39.1	41.3	c	24 36.94	53 58 10.0 11.0	III 42.420	23 23 45.47	15 5 34.41	15 6434
15	8.4	24.9	26.7	28.7	30.7	32.8	a	27 58.26	53 2 10.0 11.2	I 44.990	23 27 6.74	14 10 19.36	14 6484
16	9.0	57.5	59.5	1.7	4.0	6.1	c	28 1.76	53 2 " "	III A 40.450	23 27 10.24	14 12 8.65	14 6486
17	7.0	24.3	26.4	28.6	30.8	33.0	c	30 28.62	54 40 10.0 11.2	III 42.950	23 29 37.07	15 47 46.56	16 6314
18	8.5	17.4	19.5	21.6	23.9	26.0	c	31 21.68	54 40 " "	III A 43.140	23 30 30.12	15 51 4.66	16 6317
19	8.3	28.1	30.0	32.0	33.9	36.0	a	33 1.47	52 44 10.0 10.6	I 48.675	23 32 9.88	13 53 28.99	14 6506
20	8.8	0.9	3.1	5.4	7.4	9.6	c	33 5.28	53 38 10.0 10.5	V 44.360	23 32 13.70	—14 46 12.20	—15 6462
21	6.5	45.4	47.8	49.6	51.5	53.6	e	33 20.05	52 28 10.0 10.6	VII 46.480	23 32 28.46	—13 36 51.49	—13 6439
22	......	50.3	52.2	54.0	56.0	58.1	a	38 23.76	53 56 10.0 10.2	I A 39.630	23 37 32.11	15 5 52.93	15 6476
23	9.2	3.1	4.9	7.1	9.0	11.2	a	38 36.70	53 56 " "	III A 45.990	23 37 45.04	15 7 56.86	15 6477
24	9.4	53.8	56.0	58.2	0.3	2.5	c	38 58.16	53 56 " "	III A 47.750	23 38 6.50	15 8 30.65	15 6480
25	8.6	5.9	8.0	10.2	12.3	14.5	c	40 10.18	53 56 " "	V B 36.460	23 39 18.50	14 58 27.49	15 6487
26	9.0	47.5	49.4	51.6	53.9	56.0	c	41 51.68	53 54 10.0 11.1	III 47.610	23 40 59.98	15 3 13.87	15 6495
27	9.2	2.3	4.5	6.7	8.8	10.9	c	43 6.64	53 54 " "	III A 48.430	23 42 14.92	15 6 44.10	15 6497
28	8.9	24.8	26.7	28.6	30.5	32.8	a	44 58.15	52 44 10.0 10.8	I 42.800	23 44 6.42	13 51 36.46	14 6558
29	8.5	5.7	7.5	9.4	11.5	13.7	a	45 39.17	53 46 10.0 11.6	I 42.280	23 44 47.42	14 53 29.63	15 6503
30	6.8	41.8	43.9	45.8	47.8	50.0	a	46 15.48	53 46 " "	I A 44.470	23 45 23.72	—14 57 26.19	—15 6507
31	8.9	16.4	18.5	20.8	23.0	25.1	c	47 20.76	53 28 10.0 10.5	III (B) 42.920	23 46 28.99	—14 32 28.66	—14 6563
32	8.9	28.2	30.2	32.4	34.6	36.8	c	48 32.44	53 28 " "	III A 41.640	23 47 40.66	14 38 32.47	14 6567
33	9.2	42.0	44.1	46.2	48.4	50.7	c	49 46.28	53 28 " "	III B 46.600	23 48 54.48	14 33 39.41	14 6572
34	8.9	46.3	48.3	50.5	52.7	54.9	c	54 50.54	53 22 10.0 9.9	III 44.025	23 53 58.68	14 30 3.45	14 6590
35	8.7	3.5	5.5	7.7	9.8	12.0	c	56 7.70	53 54 10.0 11.3	III 46.370	23 55 15.81	15 2 50.65	15 6528
36	8.6	28.2	30.3	32.5	34.7	36.9	c	58 32.52	54 28 10.0 11.7	V 43.000	23 57 40.59	15 35 49.62	15 6532
37	9.3	45.9	48.0	50.3	52.5	54.6	c	59 50.26	54 28 " "	III (A) 45.680	23 58 58.32	15 39 53.83	15 6534
38	9.2	31.7	33.7	35.7	37.6	39.8	a	1 5.41	54 28 " "	I 46.490	0 0 13.45	15 36 53.04	15 6537
39	8.4	54.1	56.5	58.4	0.3	2.3	e	1 28.48	54 48 10.0 11.8	VII 41.300	0 0 36.52	15 55 19.72	16 6415
40	9.1	18.5	20.0	24.3	26.4	28.6	b_2 c_3	1 28.59	54 22 10.0 11.1	III 43.780	0 0 36.63	—15 30 2.41	—15 6541
41	8.0	28.4	30.3	32.2	34.2	36.4	a	4 1.97	54 14 10.0 11.7	I 46.410	0 3 9.98	—15 22 51.01	—15 7
42	8.9	48.1	50.0	51.9	53.8	56.0	a	5 21.54	53 36 10.0 11.4	I 43.790	0 4 29.54	14 43 58.93	14 7
43	8.8	34.0	36.0	37.8	39.8	42.1	a	6 7.50	53 24 10.0 11.6	I 45.620	0 5 15.49	14 32 33.67	14 11
44	7.8	29.2	30.7	35.0	37.1	39.3	b_2 c_3	6 39.27	53 24 " "	III B 40.030	0 5 47.26	14 27 34.57	14 16
45	8.9	7.8	9.8	11.9	14.1	16.3	c	7 11.98	52 28 10.0 11.4	V 41.320	0 6 19.98	13 35 12.36	13 18
46	8.9	29.9	31.6	33.6	35.6	37.8	a	10 3.32	53 52 10.0 10.9	I 43.320	0 9 11.26	14 59 50.72	15 28
47	7.8	10.8	12.9	15.0	17.3	19.5	c	10 15.10	53 52 " "	III 40.740	0 9 23.03	14 59 3.15	15 30
48	9.4	29.5	31.2	33.0	35.1	37.4	a	12 2.73	52 52 10.0 11.1	I A 41.935	0 11 10.66	14 2 36.22	14 33
49	7.9	47.5	49.3	51.2	53.3	55.4	a	12 20.82	52 52 " "	III B 46.210	0 11 28.75	13 57 31.89	14 35
50	7.5	38.6	40.6	42.9	45.0	47.2	c	13 42.86	52 52 " "	III 45.930	0 12 50.77	—14 0 40.41	—14 42
51	9.2	13.3	15.3	17.1	19.0	21.4	a	15 46.75	53 14 10.0 10.8	I 46.200	0 14 54.63	—14 22 44.65	—14 48
52	8.0	52.9	55.1	57.3	59.5	1.6	c	15 57.28	52 28 10.0 11.8	III 47.070	0 15 5.17	13 37 1.80	13 52
53	8.8	27.5	29.1	31.0	33.0	35.2	a	19 0.61	52 34 10.0 11.2	I 48.100	0 18 8.47	13 43 19.85	13 63
54	9.2	15.2	16.6	20.9	23.0	25.3	b_2 c_3	19 25.21	53 34 10.0 12.2	III B 42.785	0 18 33.04	14 38 29.14	14 58
55	9.3	54.8	57.0	58.9	0.7	2.9	e	19 29.18	53 34 " "	VII A 38.530	0 18 37.01	14 43 39.00	14 59
56	9.1	10.1	11.9	13.9	15.9	18.0	a	21 43.42	52 40 10.0 12.2	I 45.550	0 20 51.24	13 48 31.91	14 62
57	9.0	7.2	9.3	11.5	13.5	15.7	c	22 11.44	53 12 10.0 11.7	V 43.550	0 21 19.24	14 19 58.43	14 64
58	9.1	43.3	45.6	47.5	49.3	51.4	e	22 17.80	53 12 " "	VII B 50.190	0 21 25.60	14 18 53.62	14 66
59	......	3.6	5.7	7.8	10.0	12.3	c	24 7.88	52 46 10.0 11.0	V 41.570	0 23 15.67	13 53 19.15	14 68
60	8.8	0.2	2.3	4.5	6.7	8.8	c	25 4.50	52 58 10.0 11.1	V 46.190	0 24 12.27	—14 6 48.45	—14 71
61	8.6	29.1	31.1	33.2	35.4	37.6	c	28 33.28	52 54 10.0 12.0	III 44.860	0 27 41.01	—14 2 21.80	—14 83
62	9.5	11.8	13.9	16.1	18.3	20.4	c	31 16.10	53 20 10.0 10.8	V 43.870	0 30 23.79	14 28 5.42	14 96
63	9.1	25.1	27.2	29.2	31.4	33.5	c	34 29.28	53 42 10.0 11.7	III B 44.280	0 33 36.92	14 46 59.56	15 116
64	9.2	7.0	9.0	10.9	12.9	15.0	a	35 40.56	53 42 " "	I 46.470	0 34 48.19	14 50 53.63	15 118
65	8.6	50.2	52.3	54.5	56.6	58.8	c	35 54.48	53 18 10.0 10.4	III 43.760	0 35 2.12	—14 26 1.80	—14 110

Reduction Elements. Zone 76.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 12.3....	+0.082	+0.013	−0.172	+0.086	+0.049	−0.142
12.4....	+0.090	+0.057	−0.113			
		+0.076				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	τ Aquarii		λ Aquarii		*h* Aquarii		*c*² Aquarii		β Ceti		19 Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	52 58 11.00		46 58 10.70		47 6 10.75		60 34 11.00		57 24 11.40		50 2 10.65	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	47.670	6 24.25	46.780	6 8.00	44.660	5 26.19	45.500	5 42.48		5 3.48	47.070	6 12.90
II Red. to Mer......	.615	1.67	.770	1.72	.570	1.72	.465	1.58	43.420	1.62	.030	1.70
VI Inclination	.445		.610		.410		.240			0.44	46.845	
VII Refraction.......	.360	1 20.2	.540	1 4.8	.340	1 5.2	.170	1 47.2	.200	1 34.9	.780	1 12.5

	22 Ceti		η Ceti	
	° ′ ″		° ′ ″	
CIRCLE READING.	50 40 11.05		49 34 10.40	
	r	′ ″	r	′ ″
I Microm. Eq......	45.480	5 42.25	46.310	5 58.13
II Red. to Mer......	.440	1.69	.260	1.70
VI Inclination	.240		.060	
VII Refraction.......	.170	1 14.2	.010	1 11.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′	″
τ Aquarii	22 45 8.83	11	0.00	−66.80	53 5 57.1	3.3
λ Aquarii	22 48 14.97	11	+0.02	−66.77	47 5 25.2	4.1
h Aquarii	23 0 48.13	11	+0.02	−66.81	47 12 43.9	3.4
*c*² Aquarii	23 4 58.03	11	−0.01	−66.84	60 41 42.3	2.7
γ Cephei	23 36 8.06	8	+0.95	[−66.70]	321 54	...
β Ceti..............	0 39	..	......	....	57 30 51.8	4.1
19 Ceti..............	0 45 59.49	11	+0.01	−66.82	50 9 37.7	3.2
22 Ceti..............	0 51 53.03	11	+0.01	−66.80	50 47 9.2	3.8
43 H. Cephei........	0 55 33.47	7	+2.97	[−67.12]	313 14	...
η Ceti..............	1 4 25.95	11	+0.01	−66.82	49 41 21.5	3.6

h s
22.910..........*dt* .... −66.805
Hourly rate .... − 0.0040

° ′ ″
Adopted Equator Point 38 57 3.52

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
22 45	30.005	34.9	32.6
23 50	30.025	33.5	31.3
0 57	30.015	33.1	30.7

Note.
51. Close double.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D.S. to 1894.0				
			52°	53°	54°	55°	56°	52°	53°	54°	55°	56°
°	s	h m	s	s	s	s	s	″	″	″	″	″
52	+0.004	23 0	+15.614	+15.634	+15.653	+15.673	+15.693	+14.90	+14.57	+14.23	+13.90	+13.57
53	+0.002	23 30	15.246	15.249	15.252	15.254	+15.256	16.74	16.42	16.12	15.79	+15.48
54	0.000	0 0	14.889	14.875	14.860	14.844	......	18.38	18.09	17.80	17.50	.....
55	−0.002	0 30	+14.547	14.516	14.484	+14.450	......	+19.78	19.51	19.25	+18.99	.....
56	0.004	1 0	......	+14.180	+14.131	......	......	.....	+20.71	+20.48	.....	.....
57	−0.007											

APPARENT RIGHT ASCENSION.	*R*			
	52° 30′	53° 30′	54° 30′	55° 30′
h m	″	″	″	″
23 0	78.60	81.49	84.51	87.70
23 30	78.72	81.62	84.64	87.84
0 0	78.83	81.73	84.76	87.96
0 30	78.85	81.75	84.78	87.98
1 0	78.89	81.79	84.82	88.02

1894 NOVEMBER 14. ZONE 77. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.6	26.9	29.0	31.3	33.4	35.6	c	38 31.24	54 42 10.0	8.0	III	44.850	23 38 38.77	−15 50 19.36	−16 6352
2	8.8	33.4	35.0	37.0	39.0	41.1	a	4 6.74	54 2 10.0	7.7	I	38.140	0 4 13.94	15 8 7.64	15 11
3	8.9	47.3	49.4	51.3	53.1	55.4	a	4 20.93	54 2 “	“	III B	35.330	0 4 28.12	15 4 1.85	15 12
4	9.0	30.0	31.7	35.8	38.0	40.1	b_2 c_3	4 40.14	54 2 “	“	III	42.590	0 4 47.34	15 9 35.02	15 14
5	9.0	52.5	54.0	58.3	0.3	2.6	b_2 c_3	5 2.57	54 2 “	“	III A	44.090	0 5 9.76	15 13 18.27	15 17
6	7.8	38.1	40.3	42.3	44.0	46.1	e	5 12.45	53 52 10.0	8.0	VII	45.095	0 5 19.64	15 0 26.16	15 18
7	7.3	2.7	4.5	6.4	8.3	10.4	a	9 36.04	53 34 10.0	7.6	I	50.100	0 9 43.18	14 43 56.22	14 29
8	9.2	47.1	49.0	51.0	52.8	55.0	a	10 20.57	53 34 “	“	I A	48.620	0 10 27.70	14 46 42.42	15 34
9	8.8	18.8	20.7	22.7	24.5	26.8	a	10 52.27	53 34 “	“	III B	37.040	0 10 59.40	14 36 33.85	14 32
10	8.9	16.5	18.3	20.2	22.3	24.4	a	11 49.95	53 46 10.0	7.2	III	43.810	0 11 57.06	−14 53 57.97	−15 42
11	8.9	19.5	21.3	23.1	25.1	27.5	a	12 52.90	53 46 “	“	I B	48.030	0 13 0.00	−14 52 3.28	−15 49
12	9.4	49.0	51.1	53.3	55.4	57.5	c	17 53.26	54 12 10.0	8.9	III	46.400	0 18 0.28	15 20 50.21	15 58
13	9.1	29.4	31.2	33.4	35.6	37.9	c	23 33.50	53 50 10.0	8.6	III	43.390	0 23 40.46	14 57 51.84	15 74
14	8.9	45.5	47.7	49.9	52.0	54.3	c	24 49.88	53 50 “	“	III	45.620	0 24 56.82	14 58 34.77	15 85
15	8.9	14.1	16.1	18.4	20.5	22.7	c	58 18.36	54 50 10.0	8.4	III	45.900	0 58 24.85	15 58 47.45	16 171
16	8.0	25.5	27.3	29.3	31.2	33.4	a	59 58.86	53 10 10.0	7.3	I	42.770	1 0 5.42	14 17 40.64	14 203
17	8.9	23.1	24.7	29.1	31.1	33.3	b_2 c_3	0 33.28	53 54 10.0	7.8	III	47.440	1 0 39.80	15 3 14.52	15 196
18	9.1	8.5	10.3	12.4	14.3	16.5	a	1 41.90	52 58 10.0	8.4	I	43.350	1 1 48.45	14 5 52.10	14 211
19	8.6	33.0	34.7	36.7	38.6	40.7	a	3 6.20	52 38 10.0	8.1	I	47.970	1 3 12.75	13 47 20.01	14 219
20	8.8	25.5	27.3	29.3	31.3	33.4	a	4 58.92	53 24 10.0	8.4	I	48.310	1 5 5.40	−14 33 29.02	−14 223
21	7.4	39.6	41.4	43.3	45.3	47.5	a	6 12.91	52 54 10.0	8.3	I	44.070	1 6 19.41	−14 2 6.49	−14 225
22	8.9	14.0	15.8	17.7	19.7	21.9	a	6 47.33	53 6 10.0	8.5	I	42.250	1 6 53.82	14 13 32.32	14 227
23	9.0	50.8	52.5	56.7	58.7	0.7	b_2 c_3	7 0.88	53 6 “	“	III B	39.590	1 7 7.37	14 9 29.44	14 228
24	8.9	44.9	47.0	49.3	51.4	53.6	c	7 49.24	53 26 10.0	7.6	III	42.130	1 7 55.70	14 33 32.57	14 231
25	8.8	2.3	4.4	8.6	10.2	13.0	c_4 d_3	8 0.14	53 26 “	“	VI B	39.170	1 8 6.60	14 29 24.57	14 233
26	7.7	22.5	24.7	26.6	28.4	30.4	e	8 56.94	52 52 10.0	8.0	VII	44.570	1 9 3.42	14 0 21.65	14 235
27	8.8	20.3	22.3	26.6	28.2	30.9	c_4 d_3	10 18.12	53 18 10.0	7.6	VI	42.980	1 10 24.56	14 25 51.59	14 240
28	9.3	25.4	27.4	31.6	33.2	36.0	c_4 d_3	11 23.18	52 56 10.0	8.1	VI	45.130	1 11 29.63	14 4 32.34	14 244
29	8.0	6.0	7.9	9.7	11.7	14.0	a	13 39.33	52 44 10.0	8.0	III A	44.135	1 13 45.76	13 55 24.98	14 252
30	9.4	48.0	50.0	52.3	54.3	56.6	c	15 52.24	52 44 “	“	V B	48.910	1 15 58.65	−13 50 30.58	−14 260

Reduction Elements. Zone 77.

1894.	OBSERVED.			ADOPTED.		
	c	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 14.3....	+0.123	−0.006	−0.109	+0.113	−0.002	−0.109
14.4....	+0.103	+0.002				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ω^2 Aquarii		Mayer 986		2 Ceti		ι Ceti		β Ceti		22 Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	53 58 8.60		49 24 9.50		56 46 9.65		48 14 9.25		57 24 9.80		50 40 9.70	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.....	43.605	5 6.73	44.450	5 22.85	42.205	4 39.12	46.800	6 8.13		5 5.19		5 42.79
II Red. to Mer......	.600	1.66	.430	1.70	.115	1.63	.775	1.71		1.55		1.69
VI Inclination	.370		.220		41.920		.575			2.64	45.350	2.20
VII Refraction.......	.345	1 21.3	.180	1 9.0	.920	1 30.2	.580	1 6.4	43.400	1 32.6	.370	1 12.4

	θ Ceti	
	° ′ ″	
CIRCLE READING.	47 34 13.75	
	r	′ ″
I Microm. Eq......	43.810	5 10.17
II Red. to Mer	.745	1.71
VI Inclination	.570	
VII Refraction	.510	1 4.9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ω² Aquarii	23 37 24.61	11	+0.02	−7.62	54 4 38.3	3.1
Mayer 986	23 44 57.51	11	+0.03	−7.58	49 30 43.0	4.1
2 Ceti	23 58 29.80	11	+0.02	−7.64	56 52 20.6	3.2
ι Ceti	0 14 12.68	11	+0.03	−7.56	48 21 25.5	3.8
β Ceti	0 38 27.61	10	+0.02	−7.77	57 30 51.8	3.8
22 Ceti	0 50 53.99	11	+0.03	−7.78	50 47 8.8	3.2
43 H. Cephei	0 54 34.24	5	+2.55	[−7.68]	313 14	...
θ Ceti	1 18 54.75	11	+0.03	−7.56	47 40 30.5	3.1

h		s
0.341	*dt*	−7.644
	Hourly rate	0.0000

	° ′ ″
Adopted Equator Point	38 57 3.47

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
23 40	29.815	40.8	40.2
0 35	29.825	40.0	39.4
1 40	29.835	39.0	38.4

Notes.

1. Reddish.

ι Ceti. Images unsteady to-night.

β Ceti, 28, 29. Clouds.

23. Companion precedes.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
52	+0.027
53	0.026
54	0.025
55	+0.024

APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. S. to 1894.0			
	52°	53°	54°	55°	52°	53°	54°	55°
h m	s	s	s	s	″	″	″	″
23 30	......	......	+15.264	+15.267	.....	.....	+15.99	+15.67
0 0	......	+14.884	14.869	14.853	.....	+17.94	17.65	17.35
0 30	......	14.521	14.489	14.456	.....	19.35	19.08	18.81
1 0	+14.229	14.180	14.132	+14.084	+20.74	20.50	20.27	+20.03
1 30	+13.932	+13.868	+13.803	......	+21.60	+21.40	+21.19	.....

APPARENT RIGHT ASCENSION.	*R*			
	52° 30′	53°	54°	55°
h m	″	″	″	″
23 30	76.79	78.18	81.08	84.10
0 0	76.86	78.25	81.15	84.18
0 30	76.93	78.32	81.23	84.26
1 0	77.04	78.43	81.34	84.37
1 30	77.14	78.54	81.45	84.49

1894 NOVEMBER 15. ZONE 78. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″		
1	9.4	49.8	51.7	53.6	55.6	57.8	a	4 23.44	54 44 10.0 10.6	I	43.780	0 4 30.84	−15 51 58.62	−16	12
2	9.4	10.8	12.5	14.5	16.5	18.9	a	4 44.69	56 40 10.0 12.0	III	44.260	0 4 52.04	17 48 16.09	18	7
3	9.3	42.7	44.5	46.5	48.4	50.6	a	7 16.32	54 58 10.0 11.1	I A	41.090	0 7 23.68	16 8 22.60	16	23
4	9.3	44.0	46.1	48.3	50.4	52.5	c	7 48.26	54 58 " "	III B	50.130	0 7 55.60	16 4 49.72	16	25
5	9.3	5.2	7.3	9.6	11.8	13.9	c	8 9.56	54 58 " "	V B	44.550	0 8 16.90	16 3 4.42	16	28
6	8.8	13.5	15.6	17.8	19.9	22.2	c	9 17.80	56 8 10.0 12.2	V B	46.220	0 9 25.10	17 13 40.44	17	20
7	8.1	59.4	1.6	3.7	6.0	8.1	c	10 3.76	56 8 " "	III A	41.795	0 10 11.04	17 18 42.12	17	24
8	9.2	56.1	57.9	59.9	1.8	4.1	a	13 29.97	56 26 10.0 12.0	I	47.350	0 13 37.19	17 35 13.36	17	35
9	9.2	40.1	42.2	44.4	46.7	48.8	c	17 44.44	56 6 10.0 12.4	III	42.585	0 17 51.61	17 13 43.46	17	46
10	9.2	15.4	17.5	19.7	21.8	24.0	c	19 19.68	55 36 9.5 10.7	III A	42.420	0 19 26.84	−16 46 52.34	−17	55
11	9.0	47.0	49.0	50.9	52.9	55.0	a	20 20.84	55 36 " "	I B	45.285	0 20 27.98	−16 41 17.19	−16	65
12	9.1	45.5	47.6	49.6	51.9	54.1	c	20 49.74	55 36 " "	V	46.160	0 20 56.88	16 44 51.56	17	57
13	9.3	30.5	32.8	34.8	37.1	39.3	c	22 34.90	56 42 10.0 12.1	III A	42.970	0 22 41.98	17 53 7.47	18	62
14	9.6	23.7	26.1	28.2	30.3	32.6	c	23 28.18	56 42 " "	III B	42.530	0 23 35.25	17 46 30.81	18	64
15	9.4	50.1	52.3	54.5	56.7	58.8	c	23 54.48	56 42 " "	V B	41.380	0 24 1.55	17 46 10.52	18	67
16	9.3	32.3	34.5	36.9	39.1	41.0	c	24 36.76	56 42 " "	III (B)	39.670	0 24 43.82	17 45 36.02	18	70
17	8.9	45.1	46.9	48.8	50.8	53.0	a	31 18.81	55 40 10.0 10.6	I	44.800	0 31 25.80	16 48 23.24	17	90
18	8.5	10.6	12.4	14.5	16.5	18.5	a	32 44.46	56 8 10.0 11.8	I B	45.050	0 32 51.42	17 13 16.39	17	95
19	8.6	10.1	11.8	13.7	15.8	18.0	a	33 43.85	56 8 " "	I	48.970	0 33 50.80	17 17 45.56	17	103
20	7.7	46.9	48.8	50.6	52.6	54.8	a	35 20.67	56 0 10.0 11.5	I B	40.780	0 35 27.60	−17 3 54.20	−17	109
21	9.6	20.3	22.5	24.6	26.8	29.0	c	35 24.64	56 0 " "	V A	48.980	0 35 31.57	−17 13 3.55	−17	110
22	9.0	6.9	8.7	10.7	12.7	14.8	a	37 40.63	55 32 10.0 10.9	I	45.260	0 37 47.55	16 40 32.66	16	119
23	9.1	16.5	18.4	20.3	22.5	24.7	a	37 50.33	55 32 " "	III B	40.710	0 37 57.24	−16 35 53.49	−16	120

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
24	9.4	2.6	4.6	6.8	8.9	11.2	c	38 6.82	55 32 10.0 10.9	V B 41.960	0 38 13.73	−16 36 19.26	−16 122
25	9.1	16.6	18.6	20.5	22.4	24.6	a	39 50.59	56 38 10.0 12.4	I 46.130	0 39 57.43	17 46 53.66	18 120
26	8.0	18.3	20.4	22.4	24.3	26.5	a	40 52.33	56 4 10.0 12.0	I 43.490	0 40 59.18	17 12 1.22	17 134
27	8.3	27.8	29.5	31.5	33.5	35.7	a	49 1.48	55 34 10.0 12.1	I 46.700	0 49 8.25	16 43 2.63	16 152
28	9.1	11.3	13.3	15.2	17.2	19.5	a	50 45.20	55 46 10.0 10.6	I 45.190	0 50 51.94	16 54 33.74	17 163
29	9.5	17.7	19.5	21.5	23.4	25.5	a	51 51.54	56 28 10.0 11.7	I 45.860	0 51 58.23	17 36 49.39	17 166
30	9.5	58.4	0.5	2.7	4.9	7.0	c	52 2.70	56 12 10.0 11.0	V 45.770	0 52 9.40	−17 20 50.28	−17 167
31	9.3	48.8	50.7	52.7	54.7	56.9	a	53 22.73	56 12 " "	I 44.860	0 53 29.41	−17 20 29.29	−17 170
32	8.0	29.5	31.3	33.3	35.3	37.4	a	55 3.31	56 2 10.0 11.0	I 45.810	0 55 9.98	17 10 47.32	17 173
33	......	23.6	25.8	28.0	30.2	32.4	c	55 28.00	56 28 10.0 11.4	III 46.065	0 55 34.64	17 36 55.74	17 175
34	8.9	57.2	59.7	1.3	3.3	5.3	e	55 31.24	56 28 " "	VII 48.060	0 55 37.88	17 37 37.35	17 176
35	9.4	25.5	27.8	30.0	32.2	34.3	c	58 29.96	55 58 10.0 10.5	III 46.180	0 58 36.59	17 6 56.51	17 187
36	9.1	34.7	36.7	38.9	41.1	43.4	c	2 38.96	55 52 10.0 10.6	VI 46.880	1 2 45.54	17 1 13.02	17 195
37	8.4	36.8	39.2	41.3	45.4	47.2	c_3 d_2	3 36.90	56 28 10.0 12.0	VI 42.430	1 3 43.44	17 35 50.28	17 198
38	9.1	34.7	36.9	39.0	41.0	43.4	c	5 39.00	56 34 10.0 11.7	III 41.660	1 5 45.50	17 41 33.47	17 206
39	9.6	5.1	7.1	9.0	11.0	13.0	a	7 38.98	56 2 10.0 11.0	I B 43.790	1 7 45.49	17 6 56.97	17 210
40	9.3	55.7	57.9	0.2	2.4	4.6	c	8 0.16	56 2 " "	III A 42.605	1 8 6.66	−17 13 4.57	−17 211
41	9.4	51.7	53.3	57.7	59.7	2.2	b_2 c_3	9 2.00	56 16 10.0 12.0	III 46.535	1 9 8.48	−17 25 6.92	−17 218
42	9.5	21.3	23.4	25.5	27.8	29.9	c	9 25.58	56 16 " "	V 42.000	1 9 32.05	17 23 41.71	17 221
43	8.7	......	14.2	16.2	18.0	19.9	e	9 45.90	56 42 10.0 12.5	VII B 40.790	1 9 52.35	17 46 7.84	18 199
44	8.2	13.1	15.4	17.3	19.3	21.2	e	10 47.10	56 42 " "	VII A 47.570	1 10 53.53	17 54 46.40	18 204
45	8.0	55.2	57.4	59.6	1.9	3.9	c	11 59.60	56 28 10.0 12.2	V 45.450	1 12 6.03	17 36 49.14	17 229
46	9.4	3.8	6.0	8.0	9.8	11.8	e	12 37.88	55 50 10.0 11.0	VII 43.130	1 12 44.34	16 58 3.78	17 231
47	8.1	15.8	17.7	19.7	21.6	23.9	a	14 49.75	56 24 10.0 11.5	I 48.640	1 14 56.15	17 33 46.66	17 232
48	9.3	59.5	1.7	3.9	6.2	8.3	c	15 3.92	56 12 10.0 11.6	V 50.480	1 15 10.32	17 22 25.18	17 234
49	9.6	26.8	28.9	33.2	34.9	37.7	c_4 d_3	16 24.64	56 12 " "	VII(B) 40.655	1 16 31.04	17 16 4.60	17 238
50	9.0	40.3	42.5	46.9	48.4	51.3	c_4 d_3	19 38.23	55 50 10.0 11.6	VI 42.480	1 19 44.60	−16 57 52.31	−17 253
51	9.4	22.6	24.7	26.8	29.1	31.3	c	21 26.90	55 54 10.0 12.5	V 45.740	1 21 33.25	−17 2 55.10	−17 261
52	7.9	57.2	58.8	2.9	5.0	7.3	b_2 c_3	23 7.33	56 38 10.0 12.0	III 45.420	1 23 13.61	17 46 49.57	18 234
53	9.3	25.4	27.6	29.8	34.0	35.7	c_3 d_2	24 25.42	56 40 10.0 12.4	V 43.560	1 24 31.68	17 48 16.22	18 242
54	8.6	1.4	3.4	5.2	7.0	9.3	a	26 35.23	56 12 10.0 11.3	I B 44.260	1 26 41.50	17 17 10.59	17 274
55	9.3	37.3	39.3	41.2	43.1	45.4	a	27 11.24	56 12 " "	I A 40.560	1 27 17.50	17 22 28.07	17 277
56	8.6	29.0	30.6	34.9	37.0	39.2	b_2 c_3	27 39.20	55 32 10.0 11.0	III 42.330	1 27 45.50	16 39 47.42	16 260
57	9.3	38.9	41.0	42.9	44.9	47.2	a	29 13.05	56 42 10.0 11.8	I A 44.870	1 29 19.25	17 53 53.04	18 256
58	9.2	56.8	58.7	0.7	2.7	4.8	a	30 30.81	56 42 " "	I A 47.125	1 30 36.99	17 54 36.63	18 263
59	8.6	43.0	45.0	47.4	49.6	51.8	c	30 47.36	56 42 " "	III B 49.190	1 30 53.55	17 48 49.92	18 265
60	9.4	23.4	25.1	27.2	29.1	31.3	a	31 57.27	56 42 " "	III B 44.810	1 32 3.44	−17 47 26.11	−18 268
61	9.3	27.0	29.1	31.4	33.5	35.7	c	33 31.34	56 38 10.0 12.1	V 46.355	1 33 37.50	−17 47 11.66	−18 274
62	9.4	18.6	20.8	22.8	25.1	27.3	c	34 22.92	56 38 " "	III 41.345	1 34 29.07	17 45 33.96	17 297
63	9.5	......	1.0	3.0	5.0	7.2	a	35 33.13	56 38 " "	I A 38.770	1 35 39.26	17 47 57.38	18 282
64	9.5	12.4	14.5	16.4	18.3	20.5	a	36 46.42	56 28 10.5 11.5	I B 38.710	1 36 52.56	17 31 27.57	17 303
65	9.1	59.7	1.8	4.0	6.2	8.2	c	37 3.98	56 28 " "	III A 47.910	1 37 10.10	17 40 54.49	17 304
66	9.6	27.1	29.3	31.5	33.7	36.0	c	41 31.52	55 40 10.0 11.0	VII 43.350	1 41 37.66	16 48 13.96	17 315
67	8.0	45.4	47.5	51.7	53.4	56.0	c_4 d_3	42 43.12	56 34 10.0 12.0	VI 45.810	1 42 49.18	17 43 3.95	17 319
68	9.3	46.8	48.9	51.4	53.6	55.8	c	43 51.30	56 16 10.0 12.8	V 43.330	1 43 57.35	17 24 15.31	17 322
69	9.4	47.1	49.4	51.4	53.3	55.4	e	44 21.29	56 4 10.0 12.0	VIIB(44).980	1 44 27.37	17 9 33.79	17 324
70	9.3	23.2	25.4	27.2	29.2	31.3	e	44 57.21	56 4 " "	VII A 45.455	1 45 3.27	−17 16 11.29	−17 327
71	8.4	29.0	31.2	33.5	35.6	37.8	c	46 33.42	56 6 10.0 12.0	III 42.610	1 46 39.47	−17 13 59.50	−17 330
72	8.3	32.4	34.4	36.4	38.2	40.4	a	48 6.27	55 50 10.0 11.5	I 45.685	1 48 12.32	16 58 55.90	17 338
73	8.9	10.9	12.9	15.3	17.3	19.3	c	48 15.14	56 44 10.0 12.5	V 45.160	1 48 21.12	17 52 52.83	18 322
74	8.5	40.2	42.0	44.0	45.9	48.0	a	50 13.75	54 40 10.0 10.2	I 47.560	1 50 19.88	15 49 28.36	16 331
75	9.1	32.5	34.4	36.3	38.4	40.6	a	51 6.43	56 16 10.0 11.5	I A 41.650	1 51 12.41	17 26 55.06	17 351
76	8.2	47.3	49.1	51.0	53.2	55.3	a	52 21.08	55 46 10.0 12.0	III 44.925	1 52 27.09	16 54 44.42	17 357
77	9.1	59.8	1.6	3.6	5.5	7.6	a	53 33.37	54 44 10.0 10.9	I A 40.640	1 53 39.46	15 54 31.49	16 341
78	9.6	33.5	36.2	37.9	42.3	44.2	b_1 c_2	54 46.43	54 44 " "	IV B 43.730	1 54 52.50	15 49 5.60	16 342
79	9.6	19.9	21.7	23.8	25.8	28.0	a	56 53.82	56 18 10.0 11.5	III 41.670	1 56 59.74	17 25 44.53	17 370
80	9.5	19.0	21.3	23.4	27.9	29.4	c_3 d_2	57 19.14	55 40 10.0 12.2	V 45.110	1 57 25.11	−16 48 50.87	−17 375
81	7.8	20.9	22.6	24.8	26.6	28.9	a	59 54.80	56 42 10.0 12.3	I B 39.990	2 0 0.66	−17 45 58.98	−17 384
82	9.4	28.0	30.3	32.5	34.6	36.8	c	0 32.44	56 42 " "	III A 47.650	2 0 38.28	17 54 56.45	18 361
83	8.7	57.1	59.5	1.7	3.9	6.0	c	1 1.64	56 42 " "	V B 44.180	2 1 7.49	17 47 23.41	18 362
84	8.8	32.3	34.0	36.0	38.0	40.2	a	3 6.07	56 10 10.0 12.3	I 44.050	2 3 11.94	17 18 29.95	17 394
85	9.0	4.3	6.3	8.2	10.1	12.1	a	3 38.28	56 48 10.0 13.0	III 46.490	2 3 44.09	17 57 21.25	18 371
86	8.1	49.7	51.7	54.1	56.4	58.5	c	3 54.08	56 48 " "	V B 39.580	2 3 59.89	17 51 56.61	18 372
87	8.2	6.3	8.4	10.3	12.3	14.2	e	4 40.22	56 18 10.0 12.3	V 42.975	2 4 46.06	17 26 13.93	17 402
88	9.2	15.4	17.6	19.7	21.9	24.0	c	6 19.72	56 18 " "	III B 41.350	2 6 25.55	17 22 27.61	17 407
89	8.9	44.2	46.5	48.3	50.3	52.5	e	7 18.38	55 44 10.4 12.0	VII 40.660	2 7 24.24	16 51 30.11	17 413
90	8.8	5.7	7.6	9.5	11.5	13.6	a	7 39.48	55 44 " "	I 41.260	2 7 45.34	−16 51 36.44	−17 415
91	8.0	9.9	12.0	14.2	16.5	18.7	c	9 14.26	56 12 10.0 11.7	III 46.910	2 9 20.06	−17 21 28.37	−17 422
92	9.0	56.2	58.1	0.1	2.0	4.4	a	10 30.00	55 22 10.0 12.0	III 49.180	2 10 35.86	16 32 9.96	16 406
93	8.6	31.6	33.8	35.8	38.1	40.3	c	10 35.92	55 22 " "	V B 41.540	2 10 41.80	16 26 30.30	16 407
94	9.3	17.7	20.2	22.0	23.9	26.0	e	10 52.03	55 22 " "	VII(B) 45.830	2 10 57.90	16 27 55.24	16 408
95	9.2	24.7	26.5	28.4	30.4	32.7	a	12 58.50	56 6 10.0 12.5	III A 49.100	2 13 4.27	17 19 26.07	17 441
96	8.8	5.8	8.0	10.1	12.3	14.6	c	13 10.16	56 6 " "	III 47.680	2 13 15.93	17 15 44.39	17 442
97	9.1	37.3	39.4	41.2	43.2	45.4	a	14 11.25	56 6 " "	III B 41.700	2 14 17.02	−17 10 36.12	−17 443

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
98	9.4	49.9	51.6	53.7	55.6	57.9	a	16 23.75	56 22 10.0 12.1	I A	45.470	2 16 29.46	—17 34 16.15	—17 452
99	9.1	19.7	21.4	23.4	25.4	27.6	a	16 53.48	56 22 " "	III B	37.190	2 16 59.20	17 25 10.98	17 455
100	9.3	33.7	35.5	37.4	39.5	41.7	a	18 7.32	54 50 10.0 10.6	III	48.140	2 18 13.16	—15 59 49.98	—16 435
101	9.4	48.3	50.0	52.0	54.1	56.3	a	19 22.17	56 32 10.0 13.2	I	45.200	2 19 27.84	—17 40 58.41	—17 464
102	9.3	33.0	35.1	37.5	39.5	41.8	c	19 37.38	56 46 10.0 12.7	V	42.670	2 19 43.03	17 54 14.15	18 416
103	9.3	48.1	50.7	52.5	56.7	58.8	$b_1 c_2$	21 1.02	56 0 10.0 12.0	II	46.260	2 21 6.73	17 9 18.02	17 468
104	9.1	29.8	31.5	35.9	38.0	40.3	$b_2 c_3$	21 40.17	56 0 " "	III A	42.010	2 21 45.86	17 11 12.08	17 470
105	9.1	29.2	31.6	33.5	35.4	37.4	c	22 3.31	56 28 10.0 13.0	V	43.840	2 22 8.95	17 36 36.55	17 472
106	9.0	55.6	57.4	59.5	1.5	3.7	[illegible]	24 29.57	56 34 10.0 13.2	I	42.735	2 24 35.18	17 42 12.79	17 477
107	8.8	43.8	45.7	47.7	49.6	51.9	[illegible]	25 17.72	56 14 10.0 12.7	I A	42.540	2 25 23.35	17 25 22.57	17 480
108	9.6	30.8	32.9	35.0	37.2	39.3	c	26 35.04	56 14 " "	V A	42.990	2 26 40.67	17 25 35.22	17 484
109	9.3	43.9	45.9	48.1	50.5	52.5	c	27 48.18	56 14 " "	III B	39.200	2 27 53.80	17 17 52.85	17 490
110	9.1	44.8	47.0	49.0	51.3	53.6	c	28 49.14	55 54 8.2 10.0	V	44.380	2 28 54.78	—17 2 44.93	—17 494
111	7.8	43.2	45.0	46.9	48.9	51.1	a	30 17.06	56 30 10.0 11.3	III A	49.450	2 30 22.62	—17 43 38.83	—17 498
112	8.0	44.9	46.6	48.7	50.6	52.8	a	31 18.73	56 30 " "	I B	42.340	2 31 24.29	17 34 52.42	17 502
113	8.9	5.6	7.3	9.3	11.3	13.6	[illegible]	31 39.43	56 30 " "	III B	38.480	2 31 44.99	17 33 40.43	17 503
114	9.2	4.7	6.8	8.9	13.5	15.0	$c_3 d_2$	32 4.70	56 44 10.0 12.3	VI (B)	45.110	2 32 10.23	17 49 51.62	18 448
115	9.0	16.3	18.6	20.8	23.0	25.2	c	33 20.78	56 44 " "	III A	49.815	2 33 26.29	17 57 48.11	18 450
116	8.0	39.1	40.9	42.8	44.8	47.0	a	35 12.80	55 36 10.0 11.4	I	43.075	2 35 18.41	16 44 18.97	16 484
117	9.5	48.0	50.3	52.3	54.6	56.7	c	35 52.38	56 40 10.0 13.0	III	41.925	2 35 57.88	17 48 3.20	17 516
118	8.8	36.6	38.7	40.9	43.0	45.2	c	36 40.88	56 4 11.0 13.0	III	43.940	2 36 46.43	17 12 40.76	17 519
119	9.0	45.6	47.5	49.5	51.5	53.7	[illegible]	38 19.54	56 12 10.0 11.6	I	47.270	2 38 25.06	17 21 42.48	17 524
120	9.6	51.5	53.5	55.8	58.1	0.3	c	38 55.84	56 46 9.2 11.9	III	42.820	2 39 1.30	—17 54 20.78	—18 462
121	9.3	42.9	45.0	47.0	49.2	51.5	c	39 47.12	55 40 10.0 11.8	V	36.660	2 39 52.69	—16 46 21.52	—16 497
122	9.3	54.0	56.2	58.5	0.8	2.8	c	40 58.46	55 40 " "	V A	46.035	2 41 4.01	16 52 36.28	17 529
123	9.2	7.3	9.2	11.3	13.2	15.4	a	42 41.36	56 50 10.0 13.0	I	42.705	2 42 46.78	17 58 19.08	18 474
124	9.3	45.5	47.5	51.8	53.4	56.2	$c_4 d_3$	42 43.20	56 38 10.0 12.0	VI	45.600	2 42 48.64	17 47 18.04	17 536
125	8.1	49.8	51.9	54.0	56.0	58.5	c	43 54.04	56 2 10.0 12.0	V A	43.070	2 43 59.53	17 13 41.62	17 540
126	9.1	31.8	33.9	36.2	38.4	40.7	c	44 36.20	56 2 " "	V A	45.110	2 44 41.68	17 14 21.03	17 542
127	9.1	14.4	16.6	18.6	20.4	22.4	e	44 48.46	56 2 " "	VII B	38.630	2 44 53.96	17 5 50.02	17 545
128	8.5	57.2	59.5	1.6	3.8	6.0	c	48 1.62	55 52 10.0 11.7	V	47.050	2 48 7.10	17 1 44.37	17 557
129	9.5	46.4	48.8	50.7	52.3	54.5	[illegible]	48 20.52	55 52 " "	VII A	46.200	2 48 25.99	17 4 44.07	17 558
130	9.1	43.2	45.3	47.5	49.7	51.9	c	49 47.52	56 2 10.0 12.0	III	47.590	2 49 52.97	—17 11 54.29	—17 563
131	9.7	38.2	40.3	42.4	44.4	46.5	e	53 12.25	56 26 10.0 12.0	VII	47.680	2 53 17.63	—17 36 1.82	—17 576
132	9.6	41.5	43.9	45.9	47.6	49.8	[illegible]	54 15.61	56 38 10.0 11.5	VII (B)	43.170	2 54 20.97	17 43 22.20	17 578
133	9.5	11.4	13.7	15.6	17.5	19.6	e	54 45.42	56 38 " "	VII A	39.800	2 54 50.76	17 48 45.90	17 579
134	8.6	27.0	28.5	32.9	35.0	37.2	$b_2 c_3$	56 37.21	56 28 10.0 12.2	III	46.730	2 56 42.56	17 37 41.72	17 587
135	9.5	......	37.8	39.8	41.8	43.9	[illegible]	0 9.93	56 48 10.0 13.2	III	44.940	3 0 15.22	17 57 10.27	18 530
136	9.4	57.8	0.0	2.1	4.3	6.5	c	1 2.14	56 6 9.5 11.4	V	40.290	3 1 7.50	17 13 39.71	17 598
137	8.7	51.6	53.6	55.9	58.0	0.2	c	1 55.86	56 42 10.0 12.5	V	46.425	3 2 1.14	17 51 40.52	18 536
138	9.4	7.3	9.5	11.6	13.8	16.1	c	3 11.66	56 34 10.0 11.7	III	47.140	3 3 16.95	17 43 52.13	17 603
139	9.3	37.2	39.3	41.5	43.3	45.2	e	4 11.38	55 16 10.0 11.1	VII	42.250	3 4 16.82	16 24 17.63	16 572
140	8.9	0.5	2.4	4.5	6.4	8.5	a	4 34.28	55 16 " "	I	40.930	3 4 39.72	—16 23 47.14	—16 574
141	8.9	33.4	35.8	38.0	40.0	42.4	c	5 37.92	55 32 10.0 10.3	V	44.020	3 5 43.31	—16 40 50.99	—16 580
142	8.9	26.3	28.5	30.7	32.8	35.0	c	6 30.66	56 40 10.0 13.0	V	43.450	3 6 35.92	17 48 45.29	17 613
143	8.8	20.0	21.7	23.8	25.7	27.8	a	7 53.75	56 0 10.0 11.5	III	45.055	3 7 59.07	17 9 11.99	17 616
144	8.5	23.8	25.8	28.1	30.5	32.6	c	8 28.16	56 52 10.0 11.7	V	42.000	3 8 33.38	18 0 18.21	18 560
145	9.1	12.3	14.7	16.6	18.4	20.4	e	8 46.31	56 52 " "	VII B	49.690	3 8 51.53	17 59 33.63	18 561
146	8.9	15.2	17.2	19.0	21.0	23.3	a	10 49.04	55 46 10.0 10.7	III	46.090	3 10 54.37	16 55 31.86	17 630
147	8.5	29.7	32.0	34.0	35.8	37.8	e	11 3.82	56 2 10.4 13.0	VII	46.920	3 11 9.11	17 11 53.36	17 631
148	9.2	32.5	34.7	39.0	40.4	43.4	$c_4 d_3$	12 30.36	55 32 10.0 10.8	VI	44.110	3 12 35.70	16 40 56.39	16 605
149	9.5	51.9	53.8	55.9	57.8	59.9	e	13 25.69	56 50 10.0 11.9	VII	47.180	3 13 30.87	18 0 1.08	18 582
150	8.8	41.7	43.7	46.1	50.3	52.0	$c_3 d_2$	14 41.68	56 42 10.0 12.5	VI B	42.450	3 14 46.88	—17 47 16.06	—17 641
151	9.0	41.6	43.9	45.8	47.6	49.8	e	15 15.59	56 42 " "	VII A	47.510	3 15 20.78	—17 55 22.37	—18 589
152	8.4	5.8	7.9	12.0	13.7	16.4	$c_4 d_3$	16 3.48	56 42 " "	VI	49.970	3 16 8.67	17 52 54.77	18 593
153	9.4	36.1	37.9	40.0	41.9	44.2	a	18 9.97	56 2 10.0 12.1	I	46.690	3 18 15.22	17 11 45.80	17 653
154	7.8	33.2	35.3	37.5	39.6	41.9	c	18 37.50	56 34 10.0 13.0	III A	49.000	3 18 42.68	17 47 48.92	17 654
155	9.3	17.0	19.0	21.2	23.4	25.6	c	19 21.24	56 34 " "	V B	41.505	3 19 26.43	17 38 58.79	17 657
156	9.3	24.9	26.9	28.8	30.9	33.0	(a)	21 58.92	56 30 10.0 12.0	I	42.400	3 22 4.09	17 38 26.40	17 666
157	9.4	8.8	11.0	13.4	15.6	17.6	c	22 13.28	56 4 10.0 11.5	V	43.650	3 22 18.50	17 12 52.59	17 667
158	9.3	36.3	38.0	40.0	42.0	44.2	a	24 10.15	56 40 10.0 12.3	I	45.850	3 24 15.29	17 49 34.17	17 671
159	8.5	18.9	20.8	22.9	24.9	27.0	a	24 52.87	56 12 10.0 11.8	III	42.725	3 24 58.06	17 20 34.69	17 677
160	9.2	6.0	8.7	10.3	14.4	16.7	$b_1 c_2$	25 18.89	56 12 " "	II (B)	44.350	3 25 24.09	—17 17 51.29	—17 678
161	8.0	10.6	12.6	14.6	16.5	18.9	a	26 44.58	55 58 10.0 11.0	I	44.800	3 26 49.79	—17 7 12.16	—17 685

Reduction Elements. Zone 78.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 15.3....	+0.131	—0.059	—0.133	+0.120	—0.046	—0.133
15.5....	+0.110	—0.034				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Mayer 986		2 Ceti		ι Ceti		19 Ceti		τ^2 Eridani		η Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	49 24 9.75		56 46 11.20		48 14 10.30		50 2 10.80		60 16 10.10		48 8 10.10	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.475	5 22.77	42.190	4 38.58	46.800	6 7.62	47.160	6 14.81		5 12.83	48.290	6 36.50
II Red. to Mer.	.400	1.70	.100	1.63	.750	1.71	.110	1.70		1.59	.270	1.71
VI Inclination	.210		41.895		.570		46.970		43.790	2.20	.060	
VII Refraction	.180	1 7.9	.865	1 28.7	.500	1 5.2	.880	1 9.5	.805	1 41.6	.025	1 5.0

	τ^3 Eridani		ε Eridani	
	° ′ ″		° ′ ″	
CIRCLE READING.	62 52 11.00		48 40 10.35	
	r	′ ″	r	′ ″
I Microm. Eq.	43.325	5 0.19	41.400	4 24.77
II Red. to Mer.	.200	1.56	.360	1.70
VI Inclination	.060		.245	
VII Refraction	42.970	1 53.2	.165	1 6.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Mayer 986	23 44 57.31	11	−0.01	−7.34	49 30 42.1	3.2
2 Ceti	23 58 29.60	11	−0.02	−7.41	56 52 20.1	2.6
ι Ceti	0 14 12.55	11	−0.01	−7.39	48 21 24.8	3.0
19 Ceti	0 45 0.13	11	−0.01	−7.44	50 9 36.8	2.1
α Ursae Minoris	1 20 48.68	4	+8.81	[−7.41]	310 12	...
τ^2 Eridani	2 46 25.08	11	−0.02	−7.37	60 23 8.3	1.6
η Eridani	2 51 26.21	11	−0.01	−7.41	48 15 53.3	3.0
τ^3 Eridani	2 57 54.43	11	−0.02	−7.46	62 59 6.0	2.3
ε Eridani	3 28 7.37	11	−0.01	−7.39	48 45 43.0	2.9

h 0.178 .... *dt* .... s −7.395
Hourly rate .... −0.0046

Adopted Equator Point .... 38° 57′ 2.59″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
23 46	29.795	48.9	47.9
0 41	29.785	48.0	47.2
1 38	29.785	48.0	46.2
2 23	29.775	48.8	48.0
3 30	29.775	48.4	47.3

Notes.

33. Double, mean observed. Magnitudes 8.9, 8.9.
52. Fainter companion preceding.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				D = Z. D. S. to 1894.0			
			54°	55°	56°	57°	54°	55°	56°	57°
°	s	h m	s	s	s	s	″	″	″	″
54	−0.015	0 0	+14.871	+14.855	+14.840	+14.824	+17.59	+17.29	+16.99	+16.69
55	0.015	0 30	14.489	14.456	14.424	14.390	19.01	18.73	18.46	18.19
56	0.016	1 0	14.129	14.081	14.030	13.979	20.19	19.96	19.71	19.46
57	−0.017	1 30	13.799	13.734	13.668	13.600	21.08	20.88	20.67	20.46
		2 0	13.503	13.423	13.340	13.258	21.72	21.55	21.38	21.20
		2 30	+13.246	13.150	13.056	12.958	+22.06	21.93	21.80	21.66
		3 0	......	12.924	12.816	12.708	.....	22.01	21.92	21.83
		3 30	......	+12.746	+12.629	+12.511	.....	+21.78	+21.73	+21.68

APPARENT RIGHT ASCENSION.	R			
	54° 30′	55°	56°	57°
h m	″	″	″	″
0 0	81.23	82.74	85.88	89.17
0 30	81.28	82.79	85.94	89.23
1 0	81.36	82.87	86.02	89.31
1 30	81.45	82.97	86.12	89.41
2 0	81.32	82.83	85.98	89.27
2 30	81.17	82.68	85.82	89.10
3 0	81.21	82.72	85.86	89.15
3 30	81.26	82.78	85.92	89.21

1894 NOVEMBER 21. ZONE 79. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.9	33.1	35.1	37.3	39.4	41.6	c	3 37.30	54 34 9.2 8.5	III B 47.370	0 3 43.60	−15 40 3.78	−15 10
2	9.0	51.1	53.2	55.4	57.5	59.7	c	4 55.38	54 34 “ “	III 49.475	0 5 1.66	15 43 58.08	15 16
3	9.0	37.9	40.0	42.1	44.3	46.6	c	5 42.18	54 34 “ “	V A 45.130	0 5 48.44	15 46 50.90	16 15
4	8.6	57.5	59.7	2.0	4.2	6.3	c	7 1.94	54 34 “ “	III 47.170	0 7 8.19	15 43 13.96	15 22
5	9.1	53.8	56.1	58.2	2.5	4.1	$c_3 d_2$	9 53.83	55 38 10.0 9.5	V 45.640	0 10 0.07	16 46 50.43	17 23
6	8.7	8.2	10.1	12.1	13.9	16.2	a	11 41.76	54 12 10.0 9.6	I B 42.250	0 11 47.95	15 16 24.10	15 41
7	9.2	40.2	42.1	44.0	46.1	48.1	a	12 13.77	54 12 “ “	III 47.360	0 12 19.95	15 21 17.93	15 46
8	9.4	8.4	10.3	12.3	14.2	16.5	a	14 42.14	55 2 10.0 9.2	I A 46.680	0 14 48.27	16 14 19.73	16 48
9	8.9	34.6	36.4	38.3	40.3	42.5	a	15 8.20	55 2 “ “	I B 44.320	0 15 14.33	16 7 6.13	16 49
10	9.1	30.9	33.1	35.1	37.4	39.6	c	15 35.22	55 2 “ “	III (A) 42.815	0 15 41.34	−16 13 7.52	−16 51
11	8.6	32.1	34.2	36.4	38.5	40.7	c	17 36.38	55 56 10.0 9.5	III A 43.260	0 17 42.45	−17 7 18.93	−17 45
12	8.9	4.4	6.3	8.3	10.2	12.5	a	18 38.26	55 56 “ “	III (B) 41.660	0 18 44.32	[17 0 20.04]	17 50
13	9.1	36.5	38.7	40.9	43.1	45.3	c	18 40.90	55 56 “ “	V A 42.080	0 18 46.96	17 6 58.07	17 51
14	7.8	56.3	58.0	0.0	1.9	4.2	a	22 29.99	55 48 9.4 8.0	I 48.900	0 22 35.99	16 57 49.75	17 61
15	8.0	0.8	3.0	5.1	7.3	9.4	c	24 5.12	54 28 10.0 8.4	III 46.700	0 24 11.14	15 37 6.41	15 78
16	8.7	45.0	46.9	48.7	50.7	53.0	a	25 18.57	54 28 “ “	I A 47.500	0 25 24.57	15 40 34.44	15 86
17	8.1	12.5	14.6	16.9	19.1	21.2	c	25 16.86	55 20 10.0 8.6	V 43.350	0 25 22.84	16 28 6.51	16 81
18	8.8	44.4	46.5	48.7	50.8	53.0	c	30 48.68	54 52 10.0 9.2	III 46.300	0 30 54.60	16 1 0.92	16 102
19	8.8	7.3	9.4	11.5	13.6	15.8	c	39 11.52	53 42 10.0 8.9	III B 43.580	0 39 17.38	14 46 52.68	15 135
20	9.1	24.1	26.1	28.3	30.5	32.7	c	40 28.34	53 42 “ “	III A 43.500	0 40 34.18	−14 53 19.57	−15 137
21	9.2	46.0	48.2	50.4	52.5	54.6	c	41 50.34	54 10 10.0 9.1	III 44.350	0 41 56.14	−15 18 22.95	−15 139
22	7.9	37.5	39.3	41.3	43.4	45.6	[illegible]	45 11.24	55 18 10.0 9.5	I 41.160	0 45 16.96	16 25 23.58	16 142
23	8.7	18.7	20.4	22.4	24.4	26.4	[illegible]	45 52.18	54 34 10.0 8.1	I 45.245	0 45 57.92	15 42 39.33	15 154
24	8.6	35.1	37.2	39.3	41.5	43.5	c	46 39.32	53 12 10.0 8.8	III 42.210	0 46 45.10	14 19 39.89	14 150
25	7.5	11.2	13.3	15.4	19.6	21.1	$c_3 d_2$	47 11.12	53 18 10.0 8.1	VI 46.180	0 47 16.89	14 26 58.64	14 154
26	8.8	57.6	59.5	1.4	3.3	5.6	a	49 31.24	54 52 10.0 9.2	I 42.110	0 49 36.92	15 59 41.09	16 153
27	8.6	54.7	56.4	58.4	0.3	2.5	a	51 28.11	54 4 10.0 8.1	I 44.605	0 51 33.80	15 12 26.56	15 171
28	8.4	47.8	50.0	52.2	54.3	56.5	c	51 52.16	54 36 10.8 9.5	III B 40.285	0 51 57.82	15 39 54.38	15 172
29	8.9	45.8	48.0	50.2	52.1	54.4	c	52 50.10	54 36 “ “	V 47.550	0 52 55.75	15 45 29.64	15 176
30	9.2	42.9	44.9	47.2	49.3	51.5	c	53 47.16	54 36 “ “	III B 46.400	0 53 52.80	−15 41 52.05	−15 179
31	8.9	48.6	50.3	52.4	54.3	56.4	a	1 21.99	53 42 10.0 8.0	I 42.410	1 1 27.57	−14 49 45.06	−15 200
32	9.0	7.3	9.1	11.2	13.1	15.3	a	2 41.03	55 24 10.0 9.1	I B 43.620	1 2 46.52	16 28 59.91	16 183
33	9.1	28.7	30.6	32.6	34.6	36.7	a	3 2.49	55 24 “ “	III A 46.150	1 3 7.97	16 36 18.78	16 185
34	9.3	53.3	55.1	57.0	59.0	1.0	a	4 26.93	55 24 “ “	I A 40.160	1 4 32.39	16 34 22.20	16 188
35	8.8	26.3	28.2	30.1	32.1	34.3	[illegible]	6 0.00	55 6 10.0 10.0	I 43.330	1 6 5.46	16 14 8.38	16 191
36	8.6	27.5	29.2	31.2	33.2	35.5	[illegible]	7 1.12	55 6 “ “	I 40.720	1 7 6.57	16 13 18.48	16 196
37	8.6	22.3	24.2	26.1	28.0	30.2	[illegible]	7 55.82	54 14 10.0 9.0	I B 40.320	1 8 1.30	15 17 54.26	15 222
38	9.3	17.3	18.9	21.0	22.9	25.1	[illegible]	8 50.72	54 14 “ “	I A 37.920	1 8 56.19	15 23 36.70	15 229
39	7.8	18.8	20.8	22.8	24.7	26.8	a	9 52.60	55 12 10.0 9.3	I 45.485	1 9 58.00	16 20 50.40	16 206
40	8.8	56.4	58.2	0.3	2.3	4.5	a	11 30.28	56 4 10.0 9.5	I B 43.570	1 11 35.62	−17 9 2.78	−17 226
41	8.9	10.1	12.2	14.2	16.1	18.4	a	11 44.15	56 4 “ “	III A 39.420	1 11 49.48	−17 14 13.44	−17 227
42	9.0	13.5	15.7	17.7	19.9	22.1	c	12 17.78	54 58 10.0 8.9	V A 43.115	1 12 23.16	16 9 22.62	16 213
43	9.0	57.1	59.4	1.3	3.2	5.2	e	12 31.38	54 58 “ “	VII B 37.070	1 12 36.77	16 0 59.99	16 214
44	9.0	58.4	0.5	2.8	4.9	7.1	c	14 2.74	54 14 10.0 8.9	III 43.430	1 14 8.15	15 22 10.87	15 244
45	8.0	45.0	46.8	49.1	51.3	53.4	c	14 49.12	54 14 “ “	III A 46.320	1 14 54.51	15 26 20.90	15 247
46	9.3	33.2	35.3	37.5	39.6	41.8	c	15 37.48	55 34 10.0 9.1	III (45).110	1 15 42.79	16 42 47.23	16 224
47	8.8	29.7	31.7	34.1	36.2	38.3	c	18 34.00	55 36 10.0 10.0	V 44.630	1 18 39.26	16 44 40.95	16 232
48	8.0	6.2	8.5	10.5	12.1	14.3	e	19 40.43	55 2 10.0 9.0	VII 45.240	1 19 45.71	16 10 52.33	16 237
49	9.2	23.1	25.1	27.3	29.4	31.6	c	24 27.30	54 32 10.0 9.3	V 44.920	1 24 32.56	15 40 44.39	15 273
50	8.0	25.8	28.2	29.9	31.9	33.9	e	25 0.05	55 6 10.0 9.5	VII 44.595	1 25 5.27	−16 14 41.56	−16 253
51	6.5	35.1	37.3	39.4	41.6	43.8	c	29 39.44	54 58 10.0 9.5	III A 49.120	1 29 44.61	−16 11 20.17	−16 265
52	9.3	6.6	8.7	10.8	13.1	15.3	c	31 10.90	54 58 “ “	III A 48.670	1 31 16.05	16 11 11.89	16 272
53	8.9	2.8	5.2	7.3	9.6	11.6	c	32 7.30	54 58 “ “	III B 38.820	1 32 12.45	16 1 34.78	16 275
54	9.0	14.0	16.1	20.3	22.1	24.8	$c_4 d_3$	32 11.80	54 58 “ “	VII 41.380	1 32 16.94	16 5 40.87	16 277
55	8.4	25.5	27.6	29.8	31.9	34.1	c	33 29.78	54 50 10.0 9.5	V 43.260	1 33 34.92	15 58 15.51	16 280
56	8.2	34.9	37.0	39.3	41.4	43.5	c	35 39.22	55 38 10.0 9.5	III 47.860	1 35 44.28	16 47 44.88	17 301
57	9.1	30.1	32.3	34.5	36.7	38.8	c	36 34.48	54 36 10.0 9.1	III 42.970	1 36 39.60	15 44 8.06	15 298
58	9.4	43.3	45.3	47.2	49.1	51.4	a	38 17.23	56 12 10.0 9.7	I 41.590	1 38 22.22	17 19 45.01	17 306
59	4.5	47.2	49.0	51.0	52.9	55.1	a	39 20.87	55 18 10.0 8.6	I A 38.350	1 39 25.91	16 27 54.38	16 295
60	8.9	45.1	46.9	48.9	50.7	53.0	a	40 18.74	55 18 “ “	I B 44.900	1 40 23.77	−16 23 31.97	−16 301
61	9.0	33.1	35.3	37.4	39.6	41.8	c	40 37.44	54 32 10.0 8.4	III 45.155	1 40 42.52	−15 40 50.43	−15 309
62	9.4	23.5	25.6	27.7	29.9	32.1	c	41 27.76	53 28 10.0 8.2	III 46.720	1 41 32.90	14 37 17.67	14 332
63	8.8	26.1	27.9	30.0	31.8	34.0	a	42 59.60	54 2 10.0 8.0	I 43.520	1 43 4.69	15 10 16.12	15 318
64	8.7	35.8	37.7	39.7	41.5	43.5	a	44 9.41	54 56 10.0 8.0	I 44.860	1 44 14.42	16 4 44.61	16 310
65	9.4	54.9	56.7	58.6	0.7	2.7	a	44 28.50	54 56 “ “	III A 47.770	1 44 33.50	16 8 56.97	16 312
66	9.5	57.1	58.8	0.7	2.9	5.3	a	45 30.81	55 32 10.0 9.5	III B 41.390	1 45 35.77	16 36 29.00	16 316
67	9.0	28.5	30.6	32.8	34.9	37.1	c	45 32.78	55 32 “ “	V 46.360	1 45 37.73	16 41 19.99	16 317
68	8.6	38.5	40.7	43.0	44.9	47.3	c	46 42.88	54 30 10.0 8.9	III 44.935	1 46 47.89	15 38 47.89	15 328
69	8.6	16.3	18.2	20.2	22.1	24.4	a	48 49.93	54 20 10.0 8.2	I 43.110	1 48 54.93	15 28 10.65	15 339
70	8.8	51.9	53.7	55.7	57.7	59.9	a	49 25.57	55 4 10.0 8.7	III 44.525	1 49 30.51	−16 12 42.24	−16 328

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	■
71	9.4	23.6	25.7	28.0	30.0	32.3	c	49 27.92	55 4	10.0	8.7	V	43.660	1 49 32.86	−16 12 27.43	−16 329
72	8.1	18.8	20.6	22.7	24.6	26.9	a	52 52.58	55 28	10.0	9.0	I	45.960	1 52 57.46	16 37 10.07	16 340
73	9.1	6.7	8.3	10.2	12.3	14.5	a	57 40.17	54 54	9.5	7.5	I A	43.930	1 57 45.04	16 5 44.30	16 355
74	9.0	6.5	8.4	10.2	12.3	14.6	a	58 40.16	54 54	“	“	I B	39.075	1 58 45.03	15 57 43.06	16 358
75	9.4	39.4	41.5	43.8	45.9	48.2	c	58 43.76	55 20	10.0	8.6	V	40.410	1 58 48.59	16 27 28.28	16 359
76	9.5	44.6	46.6	49.1	51.2	53.2	c	0 48.94	55 6	10.0	9.0	V	44.810	2 0 53.76	16 14 52.81	16 367
77	7.0	22.8	25.1	27.3	29.5	31.5	c	1 27.24	54 44	10.0	8.5	V A	42.570	2 1 32.08	15 55 23.12	16 370
78	9.0	54.3	56.3	0.5	2.2	4.9	c_4 d_3	1 52.04	54 44	“	“	VI B	41.760	2 1 56.88	15 49 40.30	16 373
79	8.8	54.1	56.1	58.2	2.5	4.0	c_3 d_2	2 53.95	54 44	“	“	V B	43.820	2 2 58.78	15 49 19.28	16 376
80	8.4	59.1	1.2	3.4	5.6	7.7	c	4 3.40	55 24	9.6	8.0	III B	42.990	2 4 8.17	−16 29 3.44	−16 379
81	8.0	41.1	43.1	45.3	47.5	49.6	c	4 45.32	55 24	“	“	III A	44.220	2 4 50.07	−16 35 55.52	−16 382
82	6.8	37.9	39.7	41.7	43.6	45.8	a	6 11.44	54 24	10.5	8.6	I	43.760	2 6 16.26	15 32 28.54	15 380
83	8.0	19.1	21.2	25.6	27.2	29.9	c_4 d_3	6 17.02	54 2	9.5	7.5	VI	42.850	2 6 21.87	15 10 13.55	15 381
84	8.0	52.9	54.7	56.7	58.6	0.8	a	8 26.41	54 14	10.0	8.0	I	43.990	2 8 31.22	15 22 32.60	15 387
85	8.9	33.3	35.1	37.1	39.0	41.3	a	9 6.99	55 18	10.0	8.5	III	46.120	2 9 11.71	16 27 18.95	16 398
86	9.3	57.1	59.1	1.1	3.1	5.2	a	10 30.85	54 38	10.0	7.5	I	46.555	2 10 35.61	15 47 23.29	15 393
87	9.0	54.8	56.8	59.1	1.2	3.5	c	10 59.08	55 12	10.0	8.5	III	45.930	2 11 3.79	16 21 15.55	16 409
88	9.3	32.2	34.1	36.1	38.1	40.1	a	12 5.94	55 12	“	“	I A	44.550	2 12 10.63	16 24 1.96	16 416
89	8.8	5.1	7.3	9.4	11.7	13.8	c	13 9.46	55 12	“	“	III A	39.420	2 13 14.14	16 22 25.73	16 421
90	9.2	3.1	5.1	7.4	9.5	11.6	c	17 7.34	54 14	10.0	7.5	III	44.510	2 17 12.07	−15 22 46.86	−15 412
91	7.9	49.8	51.9	54.0	56.1	58.4	c	17 54.04	54 14	“	“	V B	50.195	2 17 58.77	−15 21 24.13	−15 416
92	7.0	36.7	38.7	40.7	42.6	44.8	a	21 10.43	54 38	10.0	7.7	I	46.570	2 21 15.09	15 47 26.94	15 426
93	9.2	32.5	34.4	36.2	38.2	40.2	a	22 5.92	53 50	10.0	7.9	I B	46.370	2 22 10.65	14 56 7.43	15 430
94	9.4	6.1	7.6	11.9	14.1	16.2	b_2 c_3	22 16.20	53 50	“	“	III A	42.660	2 22 20.92	15 1 26.49	15 431
95	9.6	58.0	59.9	2.1	4.4	6.5	c	23 2.18	54 32	10.0	8.2	V	46.030	2 23 6.83	15 41 20.84	15 433
96	9.1	53.0	55.2	57.4	59.4	1.6	c	23 57.32	54 32	“	“	III A	46.730	2 24 1.96	15 44 47.27	15 437
97	9.3	57.8	59.6	1.4	3.5	5.6	a	25 31.45	55 32	9.5	8.0	I	44.810	2 25 35.99	16 40 57.08	16 452
98	9.3	25.3	27.1	29.1	31.1	33.2	a	25 59.01	55 32	“	“	I B	40.670	2 26 3.55	16 36 23.95	16 454
99	9.0	8.8	10.6	12.4	14.5	16.7	■	26 42.32	54 36	9.1	7.0	III	46.300	2 26 46.93	15 45 24.56	15 445
100	9.0	49.0	51.2	53.2	55.5	57.7	c	26 53.32	54 36	“	“	III B	48.100	2 26 57.93	−15 42 45.34	−15 447
101	5.5	11.9	14.1	16.2	18.3	20.6	c	27 16.22	54 36	“	“	V B	42.550	2 27 20.84	−15 41 0.70	−15 449
102	9.4	3.5	5.3	7.3	9.2	11.5	■	28 37.08	54 36	“	“	III A	40.610	2 28 41.67	15 46 50.44	15 454
103	8.3	43.0	44.8	46.8	48.6	51.0	■	30 16.61	54 52	10.0	8.8	I	45.700	2 30 21.17	16 1 14.39	16 465
104	8.0	44.8	46.9	49.1	51.2	53.3	c	30 49.06	54 14	10.0	8.0	III	44.280	2 30 53.67	15 22 47.04	15 458
105	9.0	11.8	13.7	15.6	17.7	19.7	a	32 45.56	55 28	10.0	8.6	I	46.300	2 32 50.04	16 37 28.41	16 470
106	9.4	13.0	14.9	16.7	18.7	21.0	a	34 46.72	55 26	10.0	8.4	I A	41.310	2 34 51.18	16 37 7.65	16 480
107	8.2	40.0	41.9	43.8	45.7	48.1	■	35 13.74	55 26	“	“	I B	44.470	2 35 18.20	16 31 40.09	16 483
108	9.0	12.6	14.4	16.2	18.3	20.4	a	36 46.21	55 20	9.5	7.9	I	45.290	2 36 50.66	16 29 9.38	16 490
109	8.1	57.8	59.7	1.6	3.6	5.8	■	37 31.53	55 20	“	“	I B	48.320	2 37 35.98	16 26 53.96	16 492
110	8.9	48.1	50.0	52.1	53.9	56.1	■	42 21.77	54 38	9.5	7.0	I	47.310	2 42 26.24	−15 47 47.52	−15 493
111	9.0	25.4	27.5	29.6	31.9	34.2	c	42 29.72	55 14	9.0	7.5	V	46.030	2 42 34.14	−16 23 28.51	−16 502
112	9.5	17.1	18.7	20.7	22.8	24.9	a	48 50.59	54 46	10.0	7.8	I	42.200	2 48 55.00	15 54 12.78	16 524
113	9.2	53.2	55.3	57.5	59.7	1.8	c	48 57.50	55 18	10.0	8.4	V	46.340	2 49 1.85	16 27 37.89	16 525
114	9.3	9.0	11.0	13.3	15.4	17.7	c	50 13.28	55 10	10.5	9.5	V	43.420	2 50 17.64	16 18 42.69	16 530
115	9.1	46.2	48.0	49.9	51.9	54.2	a	54 19.72	54 18	10.3	8.7	I	42.690	2 54 24.13	15 26 23.39	15 525
116	8.9	46.4	48.4	50.3	52.3	54.4	a	55 20.19	55 20	10.0	8.6	I	41.040	2 55 24.48	16 27 54.93	16 543
117	9.6	23.8	25.6	27.6	29.7	31.7	a	56 57.33	54 4	10.0	7.9	I	45.440	2 57 1.74	15 13 15.93	15 531
118	8.8	42.1	44.1	46.5	48.5	50.7	c	57 46.38	54 30	10.2	9.5	III	47.690	2 57 50.74	15 40 3.46	15 532
119	9.3	57.8	59.7	1.6	3.6	5.7	■	59 31.37	54 18	10.0	8.7	I	48.080	2 59 35.74	15 28 8.59	15 537
120	9.5	39.7	41.5	43.4	45.4	47.6	a	1 13.18	54 12	10.0	9.0	I	41.200	3 1 17.55	−15 19 57.05	−15 540
121	9.3	5.8	7.6	9.6	11.6	13.8	a	1 39.35	54 12	“	“	I A	41.790	3 1 43.71	−15 23 23.06	−15 541
122	9.6	51.4	53.4	55.7	58.0	0.0	c	1 55.70	54 12	“	“	V B	37.770	3 2 0.07	15 15 41.36	15 542
123	9.3	0.9	2.9	5.2	7.3	9.5	c	3 5.16	54 12	“	“	III	44.260	3 3 9.52	15 20 58.41	15 547
124	9.3	22.5	24.5	26.7	28.8	31.0	c	4 26.70	54 54	10.0	8.5	III	46.030	3 4 30.97	16 3 34.67	16 573
125	9.3	48.1	50.1	51.9	53.9	56.1	a	5 21.79	54 54	“	“	III	46.420	3 5 26.05	16 3 42.51	16 578
126	9.3	58.0	59.6	1.7	3.6	5.9	a	6 31.54	54 54	“	“	I A	47.150	3 6 35.79	16 7 9.55	16 586
127	8.0	57.0	59.0	1.3	3.4	5.6	c	7 1.26	54 10	10.0	8.2	V	41.660	3 7 5.59	15 18 11.28	15 554
128	9.0	44.1	46.2	48.3	50.6	52.6	c	9 48.36	54 4	10.0	7.4	III	42.810	3 9 52.68	15 12 31.95	15 562
129	8.1	34.4	36.2	38.1	40.2	42.3	a	11 7.88	54 4	“	“	I B	44.855	3 11 12.20	15 9 55.94	15 568
130	9.1	58.6	0.5	2.5	4.5	6.7	a	12 32.38	55 18	10.0	9.5	I	40.485	3 12 36.55	−16 25 51.09	−16 606
131	9.0	39.3	41.1	43.1	45.0	47.2	a	13 12.88	54 44	10.0	8.5	I	42.640	3 13 17.11	−15 52 30.50	−16 610
132	8.0	32.4	34.2	36.2	38.2	40.4	a	14 6.03	54 44	“	“	I A	40.150	3 14 10.25	−15 54 57.58	−16 614

Reduction Elements. Zone 79.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 21.3....	+0.005	+0.001	−0.035	−0.009	−0.003	−0.035
21.5....	−0.023	−0.007				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		Mayer 974		ω^2 Aquarii		Mayer 986		7 Ceti		π Ceti		τ^2 Eridani	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	46 54 10.70		53 58 10.15		49 24 10.75		58 20 10.00		53 8 8.75		60 16 8.80	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	41.390	4 24.25	43.110	4 56.81	43.895	5 12.21	46.580	6 5.50	44.850	5 30.36	43.630	5 6.31
II	Red. to Mer.	.330	1.72	.060	1.66	.880	1.70	.510	1.61	.790	1.67	.530	1.59
VI	Inclination	.180		42.870		.680			−2.20	.625		.360	
VII	Refraction	.160	1 2.4	.810	1 20.3	.610	1 8.2		1 34.6	.585	1 18.2	.310	1 42.5

		η Eridani		τ^4 Eridani	
		° ′ ″		° ′ ″	
	CIRCLE READING.	48 8 9.55		60 58 8.75	
		r	′ ″	r	′ ″
I	Microm. Eq.		6 25.27	43.920	5 12.56
II	Red. to Mer.	47.720	1.73	.875	1.58
VI	Inclination	.530	0.88	.695	
VII	Refraction	.475	1 5.5	.645	1 45.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Mayer 974	23 30 15.69	11	−0.04	−8.38	46 59 39.1	52.9
ω^2 Aquarii	23 37 25.55	11	−0.04	−8.57	54 4 28.9	53.1
Mayer 986	23 44 58.49	11	−0.04	−8.54	49 30 32.9	53.5
7 Ceti	0 9 27.60	11	−0.04	−8.57	58 27 49.5	52.6
α Ursae Minoris	1 20 54.84	5	+0.73	[−8.57]	310 12	....
π Ceti	2 39 17.14	11	−0.04	−8.58	53 14 59.0	52.3
τ^2 Eridani	2 46 26.30	11	−0.04	−8.55	60 22 59.2	51.4
η Eridani	2 51 27.36	11	−0.04	−8.50	48 15 42.9	51.8
τ^4 Eridani	3 15 0.54	11	−0.04	−8.51	61 5 8.5	50.9

h s

23.758 .... *dt* .... −8.515

Hourly rate .... −0.0064

° ′ ″

Adopted Equator Point 38 56 52.31

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
23 32	29.895	47.5	47.3
0 32	29.915	47.0	48.2
1 23	29.915	46.2	46.8
2 19	29.915	45.7	46.2
3 17	29.915	45.5	45.4

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					$D =$ Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	−0.040	0 0	......	+14.913	+14.898	+14.882	......	.....	+17.05	+16.74	+16.42	.....
54	0.040	0 30	+14.552	14.520	14.488	14.456	......	+18.72	18.43	18.14	17.84	.....
55	0.041	1 0	14.198	14.149	14.101	14.052	+13.999	19.81	19.55	19.28	19.02	+18.75
56	0.041	1 30	13.869	13.805	13.741	13.674	13.608	20.64	20.41	20.17	19.94	19.71
57	−0.042	2 0	13.572	13.493	13.415	13.333	+13.250	21.18	20.98	20.79	20.59	+20.40
		2 30	+13.312	13.220	13.126	13.031	......	+21.42	21.26	21.10	20.95	.....
		3 0	......	12.989	12.882	12.776	......	.....	21.25	21.13	21.02	.....
		3 30	......	+12.805	+12.688	+12.571	......	.....	+20.94	+20.86	+20.79	.....

APPARENT RIGHT ASCENSION.	R				
	53°	54°	55°	56°	56° 30′
h m	″	″	″	″	″
0 0	77.25	80.11	83.10	86.26	87.88
0 30	77.21	80.08	83.06	86.22	87.84
1 0	77.34	80.20	83.20	86.36	87.98
1 30	77.45	80.32	83.31	86.48	88.10
2 0	77.48	80.35	83.35	86.52	88.15
2 30	77.54	80.41	83.41	86.58	88.21
3 0	77.61	80.48	83.48	86.66	88.29
3 30	77.68	80.56	83.56	86.74	88.37

1894 NOVEMBER 24. ZONE 80. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.9	15.2	17.3	19.4	21.6	23.7	c	39 19.44	52 50 10.0 7.4	III 42.780	0 39 25.64	−13 57 46.05	−14 124
2	9.0	1.9	3.7	5.6	7.6	9.8	a	41 35.24	53 10 9.5 6.0	I 45.080	0 41 41.40	14 18 28.44	14 133
3	9.1	29.7	31.6	33.6	35.6	37.7	a	42 3.21	53 30 10.0 6.5	III 47.220	0 42 9.35	14 39 12.86	14 134
4	9.2	32.7	34.6	36.4	38.4	40.6	a	43 6.14	53 42 10.0 6.9	I 46.740	0 43 12.26	14 51 2.58	15 145
5	6.2	44.7	46.6	48.4	50.4	52.6	a	44 18.04	52 58 10.0 6.9	I 44.235	0 44 24.17	14 6 12.78	14 145
6	9.3	20.1	21.8	23.9	25.6	27.9	a	45 53.43	53 28 10.0 6.6	I 47.510	0 45 59.52	14 37 16.99	14 148
7	8.8	6.1	8.2	10.5	12.5	14.7	c	46 10.40	52 34 10.0 6.5	III B 45.990	0 46 16.53	13 39 33.66	13 142
8	9.2	27.4	29.1	31.2	33.1	35.3	a	47 0.68	52 34 " "	III A 46.820	0 47 6.79	13 46 17.98	14 152
9	8.0	2.5	4.4	6.3	8.2	10.5	a	48 35.93	53 20 10.0 6.4	I 42.890	0 48 42.00	14 27 48.29	14 162
10	9.4	22.9	24.9	27.2	29.3	31.4	c	52 27.14	53 18 10.0 6.6	V 42.500	0 52 33.16	−14 25 45.08	−14 171
11	......	1.6	3.8	5.9	8.1	12.4	c_2 d_1	53 3.80	53 30 10.0 6.2	VI B 50.000	0 53 9.82	−14 36 56.43	−14 172
12	8.9	4.6	7.1	8.8	10.6	12.7	e	53 39.09	53 30 " "	VII A 43.470	0 53 45.10	14 41 20.12	14 173
13	9.3	8.1	9.7	13.9	16.1	18.2	b_2 c_3	55 18.20	53 0 10.0 6.5	III 43.870	0 55 24.21	14 8 9.22	14 184
14	9.3	43.9	45.6	49.8	51.9	54.1	b_2 c_3	55 54.06	53 0 " "	III A 44.090	0 56 0.06	14 11 27.97	14 187
15	8.3	38.6	40.3	44.5	46.6	48.7	b_2 c_3	56 48.75	53 32 10.0 6.4	III 43.830	0 56 54.72	14 40 10.03	14 191
16	9.4	24.2	26.6	28.4	30.2	32.4	e	56 58.80	52 44 9.0 5.5	VII 45.440	0 57 4.80	13 52 41.32	14 192
17	9.0	15.7	17.3	21.4	23.7	25.7	b_2 c_3	58 25.78	53 54 10.0 6.6	III 44.950	0 58 31.72	15 2 32.86	15 191
18	9.3	19.2	20.9	22.9	24.9	27.1	a	1 52.57	53 32 10.0 6.2	I 42.640	1 1 58.48	14 39 46.00	14 212
19	8.6	2.8	4.7	6.6	8.6	10.7	a	2 36.26	53 32 " "	I A 40.270	1 2 42.16	14 42 15.16	14 216
20	9.0	49.2	51.3	53.4	55.6	57.7	c	4 53.44	53 44 10.0 6.1	V B 38.130	1 4 59.30	−14 47 10.33	−15 210
21	8.8	29.4	31.7	33.7	35.4	37.5	e	5 3.83	53 44 " "	VII A 49.015	1 5 9.68	−14 57 9.00	−15 211
22	9.1	18.2	20.1	22.1	24.1	26.2	a	6 51.77	53 56 10.6 7.5	III 46.735	1 6 57.60	15 5 9 40	15 217
23	9.4	8.2	10.1	12.1	13.9	16.1	a	8 41.86	55 2 10.0 7.7	I 42.190	1 8 47.62	16 9 43.40	16 199
24	9.0	55.4	57.1	59.2	1.1	3.3	a	9 28.81	53 40 10.0 6.5	I 43.790	1 9 34.62	14 48 9.93	15 232
25	9.5	44.5	46.4	48.4	50.3	52.4	a	11 18.02	53 50 10.0 7.2	I 45.300	1 11 23.80	14 58 40.04	15 236
26	9.4	51.1	52.9	54.9	56.7	58.9	a	12 24.51	53 50 " "	I B 47.220	1 12 30.28	14 56 3.28	15 241
27	9.2	8.5	10.5	12.3	14.2	16.5	a	14 41.86	52 40 10.0 7.5	I 45.010	1 14 47.66	13 48 32.28	14 255
28	7.4	5.1	6.8	8.8	10.8	13.1	a	15 38.46	53 16 10.0 6.6	I 46.090	1 15 44.22	14 24 54.25	14 258
29	9.1	59.1	1.1	3.3	5.5	7.7	c	16 3.34	53 58 10.0 6.2	III 44.140	1 16 9.06	15 6 20.47	15 250
30	9.0	26.4	28.5	30.8	33.1	35.1	c	18 30.78	53 46 10.5 7.6	III 42.970	1 18 36.50	−14 53 58.94	−15 255
31	8.2	2.9	4.7	6.7	8.7	10.8	a	20 36.23	52 46 10.0 6.5	I 45.060	1 20 41.97	−13 54 34.14	−14 276
32	8.8	41.9	43.8	45.8	47.7	49.9	a	21 15.36	53 16 10.4 7.5	I 45.800	1 21 21.07	14 24 50.46	14 281
33	9.1	7.8	9.7	11.6	13.6	15.7	a	22 41.17	52 56 10.0 7.8	I 46.215	1 22 46.88	14 4 57.80	14 284
34	8.7	10.3	12.1	14.1	16.1	18.2	a	23 43.66	52 56 " "	I A 48.780	1 23 49.36	14 9 1.75	14 285
35	9.3	57.8	59.6	1.5	3.5	5.6	a	24 31.04	52 32 10.0 6.8	I 44.430	1 24 36.76	13 40 22.44	13 269
36	7.8	35.6	37.6	39.7	41.9	44.1	c	24 39.78	52 32 " "	III A 46.560	1 24 45.49	13 44 19.71	13 270
37	9.4	26.8	28.9	31.1	33.4	35.4	c	25 31.12	53 48 10.0 7.5	V 43.210	1 25 36.76	14 56 6.55	15 274
38	9.1	24.4	25.9	30.1	32.3	34.3	b_2 c_3	26 34.40	53 4 10.0 7.0	III 43.050	1 26 40.06	14 11 59.77	14 294
39	8.0	8.8	11.1	13.2	15.3	17.5	c	27 13.18	53 52 10.0 7.5	V 44.100	1 27 18.78	15 0 24.18	15 279
40	9.3	43.1	45.1	47.2	49.5	51.5	c	29 47.28	54 18 10.0 7.2	III 46.350	1 29 52.84	−15 27 7.18	−15 282
41	7.5	24.3	26.4	28.6	33.0	34.4	c_3 d_2	30 24.35	52 44 10.0 7.3	V 48.110	1 30 29.99	−13 53 38.78	−14 299
42	9.0	16.6	18.4	20.3	22.3	24.5	a	31 50.03	53 46 10.0 6.8	III 41.990	1 31 55.60	14 53 42.34	15 289
43	9.3	18.6	20.6	22.5	24.4	26.5	a	32 52.21	54 18 10.0 7.2	III 45.610	1 32 57.73	15 26 53.67	15 291
44	9.2	30.1	31.9	33.8	35.7	37.9	a	34 3.42	53 18 10.0 6.3	I 42.140	1 34 8.99	14 25 42.30	14 311
45	9.3	0.2	2.1	4.1	6.1	8.2	a	34 33.63	52 54 10.0 7.0	III 45.590	1 34 39.22	14 2 49.87	14 312
46	8.9	9.3	11.0	15.3	17.4	19.7	b_2 c_3	35 19.62	56 20 10.0 7.8	III 47.915	1 35 24.97	17 29 44.67	17 300
47	9.3	39.5	41.6	43.8	45.9	48.2	c	36 43.80	53 42 10.0 6.5	III 43.560	1 36 49.32	14 50 13.27	15 300
48	8.2	22.6	24.3	26.3	28.2	30.5	a	38 55.82	52 30 10.0 7.3	III 46,730	1 39 1.38	13 39 11.92	13 314
49	8.9	18.8	20.8	22.8	24.7	26.9	a	39 52.33	53 12 10.0 6.9	III 43.270	1 39 57.84	14 20 7.32	14 328
50	9.5	20.5	22.5	24.7	26.9	29.1	c	40 24.74	55 50 10.0 7.5	III 45.370	1 40 30.07	−16 58 55.39	−17 310
51	8.0	55.7	57.6	59.5	1.4	3.7	a	41 29.06	52 52 10.0 7.2	III 43.260	1 41 34.58	−14 0 6.80	−14 333
52	8.6	11.1	12.9	14.8	16.7	18.8	a	42 44.31	52 34 10.0 7.1	I 42.270	1 42 49.83	13 41 45.38	13 322
53	7.0	6.5	8.3	10.2	12.2	14.5	a	43 39.99	54 8 9.4 5.7	I 42.160	1 43 45.40	15 15 46.57	15 321
54	9.3	36.2	38.4	40.4	42.7	44.9	c	43 40.52	54 8 " "	V A 43.950	1 43 45.94	15 19 39.02	15 322
55	8.1	2.3	4.3	6.5	8.7	10.9	c	45 6.54	53 4 10.0 6.1	III 42.960	1 45 12.02	14 12 1.89	14 339
56	8.6	55.9	57.8	59.6	1.6	3.7	a	46 29.22	53 4 " "	I B 44.120	1 46 34.69	14 9 8.76	14 343
57	9.0	24.7	26.9	29.0	33.1	34.8	c_3 d_2	46 24.71	52 48 10.0 7.1	V 43.420	1 46 30.19	13 56 12.62	14 342
58	7.0	7.4	9.7	11.6	13.4	15.4	e	46 41.96	52(36) 10.0 7.4	VII 41.770	1 46 47.45	13 43 42.28	13 337
59	9.1	9.1	10.8	12.6	14.6	16.8	a	48 42.23	52(36) " "	I 43.755	1 48 47.70	13 44 15.59	13 347
60	9.3	6.1	7.9	9.8	11.7	13.7	a	49 39.34	53 2 10.0 6.2	I 42.910	1 49 44.77	−14 10 0.11	−14 355
61	9.0	48.5	50.4	52.4	54.2	56.4	a	50 21.94	53 28 11.0 8.0	III 42.020	1 50 27.34	−14 35 47.68	−14 358
62	9.3	6.8	8.4	10.5	12.3	14.6	a	51 40.09	53 28 " "	I A 45.930	1 51 45.46	14 40 15.62	14 363
63	9.4	32.9	34.8	36.7	38.7	41.0	a	52 6.39	53 28 " "	III 47.350	1 52 11.76	14 37 30.42	14 364
64	9.5	53.1	54.9	56.9	58.9	1.0	a	53 26.52	53 22 9.5 5.1	I 46.100	1 53 31.89	14 31 2.38	14 368
65	7.6	1.2	3.1	4.9	6.8	9.1	a	54 34.55	53 12 10.0 6.2	I 47.510	1 54 39.92	14 21 30.12	14 371
66	8.8	45.5	47.5	49.7	51.8	54.0	c	54 49.70	52 40 10.0 7.5	V 43.130	1 54 55.11	13 48 9.08	14 372
67	8.0	33.9	36.1	38.1	39.8	41.8	e	55 8.36	52 54 10.0 7.8	VII 42.040	1 55 13.75	−14 1 50.59	−14 373

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°	
68	9.4	53.9	55.8	58.2	0.2	2.5	c	56 58.12	53 22 10.4	7.0	III	41.900	1 57 3.45	—14 29 46.06	—14	378
69	8.8	32.7	35.0	37.1	39.2	41.2	c	57 37.04	52 28 10.0	7.5	V	47.000	1 57 42.43	13 37 23.58	13	369
70	8.6	2.2	4.1	6.0	8.0	10.1	a	59 35.60	53 8 10.0	7.4	I	47.700	1 59 40.92	—14 17 35.51	—14	386
71	9.4	43.9	45.9	48.1	50.3	52.3	c	59 48.10	53 26 10.0	7.2	V	42.160	1 59 53.40	—14 33 53.65	—14	387
72	9.0	16.0	17.9	19.9	21.8	24.0	a	0 49.49	53 26 "	"	I A	41.030	2 0 54.78	14 36 43.06	14	391
73	9.1	39.9	41.7	43.7	45.8	47.9	a	2 13.40	53 40 10.3	7.8	III (A)	46.840	2 2 18.66	14 52 37.90	15	368
74	8.4	30.1	31.9	33.8	35.6	38.1	a	3 3.48	53 40 "	"	I B	38.920	2 3 8.74	14 43 35.94	14	398
75	9.1	21.2	23.1	25.0	27.0	29.2	a	4 54.55	52 32 10.0	8.0	I	45.520	2 4 59.87	13 40 53.93	13	392
76	9.0	5.5	7.7	9.7	11.9	14.2	c	5 9.80	52 48 11.0	8.4	III	41.960	2 5 15.10	13 55 48.99	14	402
77	9.2	1.3	3.2	5.1	7.1	9.1	a	6 34.76	53 44 10.0	7.3	I	46.200	2 6 39.98	14 53 10.23	15	382
78	9.3	42.8	44.8	47.1	49.1	51.4	c	6 47.04	53 44 "	"	III A	42.715	2 6 52.26	14 55 19.82	15	383
79	9.2	11.5	13.3	15.3	17.2	19.6	a	8 44.83	52 36 10.0	7.7	I	46.060	2 8 50.12	13 45 5.43	13	411
80	8.6	2.6	4.7	7.0	9.2	11.3	c	9 6.96	55 52 10.0	8.0	III	47.345	2 9 11.98	—17 1 41.36	-17	419
81	9.0	38.5	40.3	42.3	44.2	46.5	a	11 12.00	54 2 10.0	8.0	I	44.530	2 11 17.16	—15 10 40.71	15	396
82	9.3	36.4	38.3	40.2	42.2	44.4	a	12 9.87	53 32 10.0	7.9	I	44.460	2 12 15.06	14 40 38.24	14	419
83	......	41.6	43.4	45.4	47.3	49.5	a	13 15.00	53 32 "	"	I B	39.360	2 13 20.18	14 35 46.88	14	423
84	9.2	23.4	25.2	27.1	29.1	31.3	a	13 56.80	53 32 "	"	III A	40.720	2 14 1.96	14 42 43.40	14	424
85	9.0	7.5	9.3	11.5	13.4	15.6	a	16 41.09	53 52 10.0	7.2	III	46.190	2 16 46.20	15 1 15.26	15	407
86	9.1	42.1	44.2	46.5	48.7	50.7	c	16 46.44	53 52 "	"	V A	49.540	2 16 51.54	15 5 35.74	15	408
87	9.2	58.4	0.6	2.7	4.9	7.0	c	18 2.72	53 4 10.0	7.1	III	44.610	2 18 7.89	14 12 43.18	14	442
88	9.3	31.8	33.7	35.7	37.7	39.8	a	19 5.18	52 32 10.0	6.8	III B	45.570	2 19 10.39	13 37 46.59	13	438
89	7.9	1.2	3.1	5.1	7.0	9.3	a	19 34.59	52 32 "	"	III A	47.090	2 19 39.78	13 44 44.16	13	440
90	9.1	17.8	19.6	21.6	23.6	25.8	a	20 51.21	53 12 10.0	7.4	I	44.260	2 20 56.34	—14 20 35.90	—14	453
91	9.2	0.1	1.9	3.8	5.8	8.0	a	21 33.44	53 12 "	"	I	41.560	2 21 38.57	—14 19 44.30	-14	455
92	9.2	14.3	16.2	18.1	20.0	22.2	a	22 47.66	52 58 10.0	7.5	I	45.490	2 22 52.80	14 6 59.53	14	459
93	9.5	12.3	14.2	16.0	18.1	20.3	a	23 45.80	53 52 10.0	7.0	I	42.250	2 23 50.86	14 59 59.83	15	435
94	8.1	21.0	22.7	24.8	26.6	28.9	a	24 54.25	52 34 10.0	7.4	I	41.230	2 24 59.41	13 41 37.36	13	462
95	9.2	21.1	23.1	25.3	27.4	29.6	c	25 25.30	52 34 "	"	III A	39.085	2 25 30.45	13 44 13.74	13	464
96	8.1	51.1	53.0	54.9	56.9	59.0	a	28 24.57	53 40 10.0	7.1	I	43.030	2 28 29.60	14 48 15.78	15	453
97	8.4	36.7	38.6	40.6	42.4	44.8	a	29 10.19	53 28 10.6	7.9	III	43.660	2 29 15.24	14 36 30.21	14	478
98	9.1	45.2	47.4	49.3	51.1	53.0	e	29 19.63	52 48 10.4	7.9	VII	47.430	2 29 24.72	13 57 44.09	14	479
99	8.9	27.6	29.5	31.4	33.3	35.5	a	32 0.90	52 32 10.0	7.5	I	41.860	2 32 6.00	13 39 51.72	13	493
100	8.7	0.0	1.8	3.7	5.7	7.8	a	33 33.26	52 40 10.0	8.2	III	40.950	2 33 38.35	—13 47 37.37	—13	498
101	8.1	2.2	3.9	5.8	7.7	10.0	a	34 35.37	52 40 "	"	I B	45.720	2 34 40.45	—13 45 53.54	—13	502
102	9.1	58.5	0.4	2.4	4.5	6.6	a	35 32.08	53 46 10.3	8.1	III B	43.130	2 35 37.06	14 51 9.11	15	472
103	......	31.8	33.7	35.9	38.1	40.3	c	35 35.96	53 46 "	"	V B	48.010	2 35 40.94	14 52 44.52	15	473
104	9.3	0.7	2.6	5.1	7.2	9.2	c	36 4.96	53 46 "	"	V B	40.950	2 36 9.94	14 50 29.19	15	475
105	6.5	40.2	42.3	44.4	46.7	48.7	c	36 44.46	53 46 "	"	V A	46.500	2 36 49.42	14 58 44.15	15	478
106	9.6	28.8	30.7	32.6	34.6	36.6	a	39 2.31	54 4 10.0	7.5	III B	50.040	2 39 7.22	15 11 23.28	15	486
107	8.7	36.7	39.0	40.9	42.9	44.9	e	39 10.99	55 4 10.5	9.0	V	43.370	2 39 15.81	16 12 34.75	16	495
108	8.9	2.5	4.6	6.8	8.9	11.0	c	42 6.76	52 36 10.0	7.5	III	47.260	2 42 11.78	13 45 40.80	13	525
109	9.0	7.8	9.8	11.7	13.6	15.8	a	43 41.19	52 38 10.5	8.5	I	41.640	2 43 46.20	13 45 52.41	13	535
110	8.0	34.6	36.4	38.3	40.2	42.4	a	45 7.89	53 4 10.0	7.2	I A	43.370	2 45 12.84	—14 15 40.87	—14	541
111	9.1	8.2	10.1	12.5	14.6	16.8	c	45 12.44	53 4 "	"	V B	36.100	2 45 17.40	—14 6 56.74	—14	543
112	9.3	8.7	10.6	12.4	14.4	16.6	a	47 42.10	53 28 10.0	8.1	I B	44.420	2 47 47.00	14 33 35.11	14	551
113	9.3	7.1	8.7	10.8	12.7	14.9	a	48 40.41	53 28 "	"	I A	44.530	2 48 45.30	14 40 5.89	14	555
114	9.2	33.8	35.7	37.6	39.5	41.6	a	49 7.09	52 38 10.0	8.5	III	41.190	2 49 12.06	13 45 47.36	13	552
115	7.7	31.8	33.7	35.6	37.5	39.7	a	50 5.20	53 16 10.0	8.6	III	47.560	2 50 10.09	16 25 51.67	14	557
116	8.0	31.1	32.9	34.9	36.8	39.0	a	51 4.44	52 58 10.0	8.9	III	42.550	2 51 9.37	14 6 15.20	14	564
117	9.1	58.3	0.1	2.1	4.1	6.2	a	52 31.61	52 34 10.0	8.4	I	45.000	2 52 36.56	13 42 59.53	13	560
118	8.8	35.2	37.1	38.9	40.8	43.0	a	54 8.45	52 34 "	"	I A	39.795	2 54 13.38	13 44 34.73	13	564
119	7.4	2.1	4.1	6.2	8.4	10.5	c	55 6.26	52 56 10.0	9.5	III	44.490	2 55 11.15	14 4 54.09	14	576
120	8.5	5.4	7.2	9.1	11.1	13.3	a	57 38.69	52 46 10.0	9.4	I	46.540	2 57 43.59	—13 55 31.92	—14	591
121	9.2	56.9	59.1	1.1	3.4	5.4	c	58 1.18	53 44 10.0	8.4	V B	37.560	2 58 6.00	—14 47 31.73	[illegible]	593
122	8.9	56.1	58.3	0.4	2.5	4.7	c	59 0.40	53 44 "	"	V A	46.020	2 59 5.20	14 56 42.67	15	535
123	8.0	41.6	43.4	45.3	47.3	49.5	a	1 14.88	52 38 10.0	9.2	I A	42.120	3 1 19.77	13 49 22.49	14	601
124	8.6	18.8	20.7	22.6	24.5	26.7	a	1 52.11	52 38 "	"	I B	40.140	3 1 57.01	13 42 16.41	13	592
125	7.9	57.1	58.8	0.8	2.6	5.1	a	2 30.38	53 0 10.0	8.3	III	42.700	3 2 35.23	14 8 22.03	14	604
126	9.2	4.8	6.5	8.6	10.5	12.6	a	4 38.05	52 36 10.0	8.7	I	40.920	3 4 42.93	13 43 45.89	13	599
127	9.3	2.4	4.2	6.2	8.2	10.3	a	5 35.71	52 36 "	"	I	45.860	3 5 40.58	13 45 21.02	13	601
128	9.1	50.8	53.5	55.1	59.2	1.4	b_1 c_2	6 3.54	52 48 10.0	9.1	II	44.420	3 6 8.38	13 56 55.28	14	612
129	......	32.7	34.2	38.4	40.6	42.7	b_2 c_3	6 42.72	52 48 "	"	III B	45.140	3 6 47.56	13 53 56.48	14	617
130	8.9	14.7	16.8	19.1	21.2	23.4	c	7 19.04	53 28 10.0	8.5	V	44.360	3 7 23.80	—14 36 58.83	-14	620
131	7.8	15.7	17.6	19.6	21.3	23.6	a	8 49.04	52 52 10.0	8.2	I	44.170	3 8 53.86	-14 0 50.25	—14	625
132	8.5	30.1	32.1	33.9	35.8	38.1	a	10 3.59	53 40 10.0	8.0	I	44.160	3 10 8.32	14 48 52.63	14	627
133	8.7	25.7	27.6	29.8	32.0	34.2	c	10 29.86	52 44 10.0	8.1	III	40.520	3 10 34.68	13 51 42.39	14	630
134	9.1	42.3	44.2	46.1	48.1	50.2	a	12 15.63	52 36 10.0	8.0	I	42.370	3 12 20.45	13 44 16.21	13	621
135	9.2	25.1	26.8	28.9	30.6	32.9	a	12 58.41	53(24) 10.0	8.5	I B	41.520	3 13 3.15	14 28 48.79	14	639
136	8.0	21.6	23.4	25.4	27.4	29.5	a	13 55.03	53(24) "	"	I A	47.325	3 13 59.76	14 37 8.86	14	646
137	9.2	17.1	19.2	21.4	23.6	25.7	c	14 21.40	55 38 10.0	8.0	V B	50.405	3 14 25.89	16 45 49.72	16	615
138	9.0	16.2	18.3	20.4	22.6	24.8	c	15 20.46	53 22 10.0	7.1	V B	51.180	3 15 25.18	—14 29 57.96	-14	648

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
139	9.3	34.1	36.1	38.2	40.6	42.7	c	16 38.34	54 36 10.0 7.5	III B 43.610	3 16 42.93	−15 41 35.12	−15 583
140	7.5	10.9	12.9	15.2	17.3	19.6	c	17 15.18	54 36 " "	III A 46.740	3 17 19.76	−15 49 3.72	−15 584
141	8.6	8.7	10.4	12.3	14.3	16.5	a	18 42.00	53 22 10.0 7.1	I A 45.790	3 18 46.70	−14 34 40.50	−14 657
142	9.2	52.3	54.2	56.1	58.1	0.2	a	19 25.88	54 18 10.0 7.9	III A 48.385	3 19 30.48	15 31 35.48	15 592
143	8.5	58.6	0.6	2.5	4.5	6.7	a	20 32.25	54 18 " "	I B 41.970	3 20 36.85	15 23 2.55	15 595
144	9.3	30.5	32.4	34.4	36.2	38.6	a	22 4.00	53 36 10.0 7.2	I 45.550	3 22 8.68	14 45 23.35	14 675
145	8.0	23.1	25.1	26.9	28.9	31.1	a	22 56.60	53 36 " "	I B 47.745	3 23 1.28	14 42 52.02	14 677
146	9.4	24.4	26.4	28.2	30.2	32.5	a	23 58.18	55 24 10.0 8.8	I 41.415	3 24 2.64	16 32 10.79	16 642
147	9.0	27.7	29.4	31.3	33.3	35.5	a	25 1.02	53 36 10.0 7.1	I A 38.385	3 25 5.68	14 46 21.51	14 682
148	9.4	51.2	53.1	54.9	56.8	59.1	a	26 24.60	53 36 " "	I B 43.630	3 26 29.26	14 41 34.40	14 688
149	8.9	32.4	34.5	36.6	38.8	40.9	c	29 36.64	53 58 10.0 7.5	V B 40.680	3 29 41.24	15 2 43.98	15 620
150	9.4	5.1	6.8	8.7	10.8	13.0	a	30 38.52	53 58 " "	III A 40.785	3 30 43.10	−15 9 12.94	−15 621
151	9.3	39.2	41.1	43.1	45.0	47.2	a	31 12.75	53 58 " "	I 41.580	3 31 17.32	−15 6 12.03	−15 622
152	9.4	47.0	48.9	50.8	52.8	55.0	a	32 20.41	53 10 10.0 7.5	I B 42.820	3 32 25.07	14 15 20.24	14 708
153	8.8	32.5	34.3	36.3	38.1	40.5	a	33 5.86	53 10 " "	I 39.180	3 33 10.51	14 17 24.49	14 711
154	9.3	18.1	19.9	21.8	23.9	26.0	a	33 51.46	53 10 " "	I 45.720	3 33 56.11	14 19 30.31	14 715
155	9.3	36.1	37.8	39.7	41.8	44.1	a	35 9.62	54 36 10.0 7.5	I 45.990	3 35 14.10	15 45 40.17	15 633
156	9.3	29.4	31.2	33.0	35.1	37.3	a	36 2.71	53 8 9.4 6.8	I B 48.745	3 36 7.35	14 15 14.70	14 721
157	9.0	59.1	0.8	2.9	4.8	7.1	a	36 32.46	53 8 " "	I 51.310	3 36 37.09	14 19 17.94	14 726
158	8.4	59.6	1.5	3.3	5.3	7.6	a	37 33.26	55 12 10.0 8.6	III B 41.040	3 37 37.67	16 16 56.55	16 688
159	8.9	8.6	10.8	12.8	15.2	17.3	c	38 12.94	55 12 " "	III (A) 41.750	3 38 17.33	16 23 38.77	16 689
160	9.3	12.1	14.0	16.0	17.9	20.2	a	39 45.86	55 12 " "	I 45.960	3 39 50.25	−16 21 43.78	−16 694
161	8.9	56.9	58.6	0.5	2.5	4.7	a	40 30.23	53 40 10.0 7.5	I 45.855	3 40 34.78	−14 49 37.02	−14 741
162	9.3	55.2	57.2	59.1	1.0	3.2	a	41 28.83	54 22 10.0 7.7	I B 46.585	3 41 33.31	15 28 39.72	15 652
163	8.0	16.8	18.6	20.7	22.6	24.7	a	41 50.38	54 22 " "	III A 41.720	3 41 54.85	15 33 36.73	15 654
164	8.0	14.4	16.5	18.7	22.9	24.6	c_3 d_2	43 14.39	54 16 10.0 8.0	VI 42.720	3 43 18.87	15 24 44.46	15 664
165	8.9	26.1	28.1	30.1	31.9	34.2	a	44 59.58	53 2 10.0 7.4	III 45.370	3 45 4.19	14 11 29.69	14 757
166	9.2	23.1	24.8	26.8	28.8	31.1	a	45 56.57	54 4 10.0 7.5	III 46.230	3 46 1.06	15 13 49.56	15 676
167	9.0	20.6	22.6	24.8	27.1	29.2	c	46 24.86	54 22 10.0 8.5	III 47.495	3 46 29.31	15 32 15.43	15 678
168	8.0	59.4	1.2	3.2	5.1	7.3	a	47 32.74	53 4 10.0 7.8	III B 44.190	3 47 37.35	14 9 54.60	14 765
169	9.2	23.5	25.3	27.2	29.3	31.4	a	48 56.85	53 4 " "	I 44.730	3 49 1.45	14 13 17.45	14 769
170	9.4	17.2	19.1	20.9	23.0	25.1	a	50 50.59	53 14 10.0 8.0	I 44.360	3 50 55.16	−14 23 11.71	−14 780
171	9.0	56.7	58.4	0.7	2.3	4.6	a	51 30.05	53 4 9.0 6.6	I 43.630	3 51 34.64	−14 12 56.31	−14 782
172	9.4	3.6	5.5	7.3	9.5	11.6	a	55 37.24	54 44 10.0 7.7	I 44.640	3 55 41.62	15 53 23.29	16 752
173	8.9	0.5	2.5	4.4	6.3	8.6	a	56 34.24	55 0 10.0 7.9	I 41.860	3 56 38.58	16 8 31.26	16 755
174	9.3	16.8	18.6	20.6	22.6	24.9	a	56 50.47	55 0 " "	III B 44.520	3 56 54.81	16 6 10.55	16 757
175	9.0	29.7	31.3	33.3	35.3	37.6	a	59 3.21	54 52 10.0 7.8	I 45.640	3 59 7.55	16 1 44.42	16 767
176	8.0	6.6	8.3	10.3	12.3	14.5	a	59 40.16	54 52 " "	I B 50.080	3 59 44.50	15 59 56.09	16 771
177	9.3	12.9	14.8	16.6	18.6	20.9	a	0 46.51	54 52 " "	I B 46.670	4 0 50.85	−15 58 51.11	−16 775

Reduction Elements. Zone 80.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 24.3....	+0.069	−0.020	+0.047	+0.067	−0.022	+0.047
24.5....	+0.065	−0.025				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 628		Piazzi O. 91		22 Ceti		η Ceti		ε Eridani		γ Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	59 44 9.60		63 12 8.85		50 40 8.80		49 34 8.50		48 40 8.85		52 38 8.60	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.050	5 53.73	43.240	4 59.54	45.310	5 38.65	46.080	5 53.73		4 16.92	45.610	5 44.36
II Red. to Mer.....	.005	1.59	.190	1.56	.240	1.69	.030	1.70	40.990	1.72	.550	1.67
VI Inclination.....	45.845		.030		.050		45.845		.820	0.88	.340	
VII Refraction.....	.825	1 40.2	42.960	1 55.6	44.980	1 11.5	.770	1 8.8	.840	1 6.7	.270	1 17.0

	o^1 Eridani		*A* Eridani	
	° ′ ″		° ′ ″	
CIRCLE READING.	45 58 9.60		49 22 9.70	
	r	′ ″	r	′ ″
I Microm. Eq......	40.895	4 13.81	41.500	4 26.65
II Red. to Mer......	.820	1.73	.500	1.70
VI Inclination......	.605		.310	
VII Refraction......	.560	1 0.8	.250	1 8.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 628	0 23 14.04	11	+0.10	−8.35	59 51 45.1	55.0
Piazzi O. 91	0 25 16.63	11	+0.11	−8.37	63 19 5.6	53.8
22 Ceti	0 50 54.44	11	−0.09	−8.34	50 47 0.6	53.9
η Ceti	1 3 27.42	11	+0.09	−8.42	49 41 12.7	53.6
ε Eridani	3 28 8.27	11	+0.09	−8.31	48 45 35.1	53.7
γ Eridani	3 53 17.13	11	+0.09	−8.30	52 45 11.6	54.4
Groombridge 750	4 3 58.09	7	+0.22	[−8.29]	313 40	...
o¹ Eridani	4 6 53.63	11	+0.09	−8.30	46 3 25.9	54.6
A Eridani	4 9 33.21	11	+0.09	−8.26	49 27 46.5	54.6

h s
0.680 . . . . *dt* . . . . −8.370
Hourly rate . . . . +0.0242

° ′ ″
Adopted Equator Point 38 56 54.20

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
0 17	29.745	43.8	44.3
1 7	29.745	43.2	43.6
2 10	29.735	43.0	44.0
3 3	29.745	43.2	43.3
4 11	29.745	42.1	41.7

Notes.
32. Faint companion, s. p.
66. Faint companion, n. f.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	+0.093	0 30	+14.618	+14.589	+14.558	......	......	......
53	0.094	1 0	14.276	14.229	14.181	+14.132	+14.083	......
54	0.095	1 30	13.956	13.894	13.829	13.764	13.699	+13.633
55	0.097	2 0	13.666	13.588	13.511	13.431	13.351	+13.268
56	0.098	2 30	13.411	13.320	13.228	13.136	13.041	......
57	+0.098	3 0	13.194	13.093	12.989	12.884	12.776	......
		3 30	+13.021	12.908	12.796	12.680	12.563	......
		4 0	......	+12.774	+12.651	+12.527	+12.403	......

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1894.0						*R*				
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′
h m	″	″	″	″	″	″	″	″	″	″	″
0 30	+18.62	+18.31	+18.01	.....	.....	.....	76.03	78.83	81.75	84.84	88.06
1 0	19.65	19.37	19.10	+18.82	+18.55	.....	76.08	78.89	81.81	84.90	88.13
1 30	20.40	20.16	19.92	19.66	19.42	+19.17	76.07	78.87	81.79	84.88	88.10
2 0	20.87	20.66	20.45	20.24	20.03	+19.82	76.03	78.83	81.75	84.84	88.06
2 30	21.05	20.87	20.70	20.53	20.35	.....	76.07	78.87	81.79	84.88	88.10
3 0	20.91	20.78	20.65	20.52	20.38	.....	76.16	78.96	81.88	84.98	88.21
3 30	+20.50	20.41	20.31	20.22	20.13	.....	76.26	79.07	82.00	85.09	88.33
4 0	.....	+19.73	+19.69	+19.64	+19.59	.....	76.37	79.18	82.11	85.21	88.45

1894 DECEMBER 3. ZONE 81. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.0	40.3	42.2	44.0	46.1	48.3	a	52 14.02	55 24 10.0	9.2	I	46.130	0 52 18.67	−16 32 53.31	−16 159
2	8.6	7.5	9.3	11.3	13.2	15.5	a	52 41.17	55 8 10.0	9.2	I A	44.640	0 52 45.83	16 19 38.52	16 161
3	8.5	32.7	34.6	36.6	38.5	40.8	a	53 6.44	55 8 "	"	I B	45.690	0 53 11.10	16 13 30.41	16 162[1]
4	8.6	2.3	4.5	6.6	8.8	11.0	c	53 6.64	55 8 "	"	III B	45.295	0 53 11.30	16 13 24.77	16 162[2]
5	9.2	32.6	34.4	36.3	38.4	40.5	[illegible]	9 6.35	55 48 10.0	9.2	I	46.825	1 9 10.76	16 57 10.67	17 219
6	8.9	7.7	9.9	12.2	14.3	16.5	c	9 12.12	55 32 10.0	9.8	V	41.710	1 9 16.55	16 39 35.76	16 201
7	9.0	51.4	53.4	55.7	57.9	59.9	c	11 55.66	54 26 10.0	8.8	III	48.340	1 12 0.11	15 35 38.08	15 239
8	9.2	20.6	22.7	24.9	27.2	29.4	c	15 24.96	56 14 10.0	10.0	III	46.720	1 15 29.27	17 23 13.57	17 236
9	8.4	59.9	1.9	4.1	6.2	8.5	c	18 4.12	55 56 10.0	9.6	V B	41.435	1 18 8.41	17 0 19.48	17 247
10	8.3	30.4	32.2	34.1	36.2	38.4	a	18 4.19	55 56 "	"	I	46.470	1 18 8.48	−17 5 6.22	−17 248
11	9.1	42.1	44.0	45.9	47.9	50.1	a	20 15.99	56 18 10.0	9.5	I	42.565	1 20 20.23	17 25 52.80	−17 258
12	9.0	33.0	34.9	36.8	38.8	41.0	a	21 6.96	56 40 10.0	10.5	I	48.470	1 21 11.16	17 49 47.95	18 229
13	9.3	6.9	8.7	10.7	12.6	15.0	a	22 40.79	56 26 10.0	10.6	I	47.580	1 22 44.99	17 35 30.53	17 263
14	8.9	33.5	35.2	37.0	39.2	41.4	a	23 7.13	55 34 10.0	10.2	III	46.380	1 23 11.37	16 43 6.73	16 245
15	8.6	59.3	1.0	3.0	4.8	7.2	a	24 32.92	55 34 "	"	III B	44.045	1 24 37.15	16 39 8.37	16 250
16	8.9	2.1	3.8	5.9	7.8	10.0	a	26 35.84	55 50 10.0	8.7	I A	43.800	1 26 40.02	17 1 30.55	17 273
17	9.1	18.8	20.6	22.5	24.6	26.6	a	27 52.52	55 50 "	"	I B	40.850	1 27 56.69	16 54 5.88	17 280
18	9.4	42.1	44.0	45.9	48.0	50.2	a	29 15.91	55 34 10.0	8.8	I	41.040	1 29 20.08	−16 41 22.91	−16 262

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°	
19	9.4	37.6	39.6	41.5	43.4	45.7	a	30 11.43	55 34	10.0	8.8	I	39.300	1 30 15.59	−16 40 49.74	−16	266
20	9.1	27.9	30.0	32.3	34.4	36.6	c	30 32.24	56 10	10.0	10.0	III	43.520	1 30 36.35	−17 18 15.16	−17	284
21	9.1	12.2	14.3	16.5	18.7	20.9	c	32 16.52	55 38	10.0	8.9	III	44.580	1 32 20.65	−16 46 33.74	−17	292
22	8.6	9.7	11.5	13.5	15.5	17.7	a	39 43.55	56 12	10.0	9.6	I	42.910	1 39 47.55	17 20 3.57	17	309
23	9.2	20.7	22.5	24.4	26.4	28.6	a	45 54.58	56 42	10.0	10.2	I	43.800	1 45 58.48	17 50 24.06	18	317
24	9.0	4.3	6.2	8.2	10.1	12.4	a	46 38.23	56 20	10.0	9.9	I	45.870	1 46 42.13	17 29 2.66	17	331
25	6.8	25.8	27.6	29.6	31.5	33.8	a	47 59.64	56 20	"	"	I B	44.170	1 48 3.53	17 25 16.56	17	336
26	9.1	40.0	41.9	44.0	46.1	48.3	a	49 14.06	56 20	"	"	I A	45.015	1 49 17.93	17 32 1.46	17	342
27	9.0	25.3	27.2	29.1	31.0	33.3	a	50 59.20	56 32	10.0	10.1	I B	44.635	1 51 3.04	17 37 26.97	17	348
28	8.8	50.1	0.2	2.5	4.7	6.8	c	51 2.46	56 32	"	"	III	48.155	1 51 6.30	17 41 50.35	17	349
29	9.5	42.0	44.0	46.1	48.0	50.0	e	51 15.96	56 12	10.0	9.7	VII	42.220	1 51 19.82	17 19 58.59	17	352
30	8.1	55.2	56.7	1.0	3.2	5.4	b_2 c_3	57 5.37	55 54	10.0	10.0	III	45.850	1 57 9.18	−17 3 5.71	−17	371
31	9.3	15.5	17.7	19.8	22.0	24.2	c	57 19.84	55 54	"	"	V	45.500	1 57 23.65	−17 3 0.84	−17	373
32	8.3	0.7	2.7	4.7	6.8	8.9	a	58 34.76	56 22	10.0	9.8	III	45.080	1 58 38.51	17 30 52.71	17	381
33	8.0	5.7	7.6	9.6	11.5	13.8	a	59 39.51	55 36	10.0	9.0	I B	45.420	1 59 43.32	16 41 41.00	16	362
34	9.0	45.2	47.3	49.4	51.6	53.8	c	59 49.46	55 36	"	"	III	48.810	1 59 53.26	16 46 1.88	16	364
35	9.0	11.2	13.0	14.8	16.8	19.0	a	2 44.85	55 44	10.0	8.7	I B	37.700	2 2 48.61	16 47 13.94	17	391
36	9.4	46.5	48.4	50.4	52.4	54.6	a	3 20.37	55 44	"	"	I A	44.600	2 3 24.12	16 55 54.89	17	396
37	8.9	39.7	41.6	43.5	45.4	47.7	a	4 13.52	56 2	10.0	9.8	I B	44.200	2 4 17.24	17 7 20.58	17	399
38	8.9	54.6	56.6	58.5	0.4	2.7	a	5 28.51	56 2	"	"	I	46.950	2 5 32.21	17 11 27.54	17	405
39	8.8	22.5	24.5	26.8	28.9	31.2	c	5 26.78	56 32	10.0	10.2	V	42.540	2 5 30.44	17 40 8.37	17	404
40	9.5	6.7	8.8	10.8	12.7	15.0	a	9 40.87	56 46	10.0	10.9	I	43.805	2 9 44.48	−17 54 31.25	−18	387[1]
41	9.5	47.2	51.5	53.0	55.9	......	c_5 d_3	9 42.83	56 46	"	"	III	42.770	2 9 46.44	−17 54 13.38	−18	387[2]
42	8.9	50.2	52.5	54.3	56.2	58.2	e	10 24.30	55 38	10.0	9.6	V A	45.030	2 10 27.98	16 50 8.94	17	429
43	8.6	19.4	21.3	23.3	25.3	27.4	a	11 53.22	55 38	"	"	I B	48.380	2 11 56.90	16 44 41.70	16	414
44	8.9	56.9	58.6	2.9	5.0	7.2	b_2 c_3	12 7.19	55 38	"	"	III	44.990	2 12 10.86	16 46 52.48	16	415
45	8.8	23.9	25.8	27.7	29.6	31.9	a	12 57.67	55 38	"	"	I	47.720	2 13 1.33	16 47 43.18	17	440
46	9.3	13.9	15.8	17.7	19.8	22.0	a	16 47.74	55 46	10.0	9.1	I B	42.670	2 16 51.35	16 50 53.71	17	453
47	8.0	56.4	58.3	0.3	2.2	4.5	a	17 30.25	55 46	"	"	I A	44.000	2 17 33.84	16 57 47.83	17	457
48	9.4	22.9	25.0	27.3	29.5	31.6	c	18 27.26	55 46	"	"	III (B)	49.190	2 18 30.85	16 53 1.34	17	463
49	7.8	17.3	19.6	21.8	23.9	26.0	c	19 21.72	55 34	10.0	8.8	III	43.685	2 19 25.32	16 42 29.03	16	438
50	9.0	33.7	35.5	37.4	39.3	41.6	a	24 7.31	55 18	10.0	8.7	I B	35.390	2 24 10.89	−16 20 34.67	−16	448
51	9.0	11.8	13.6	15.6	17.4	19.8	a	24 45.48	55 18	"	"	III A	46.370	2 24 49.04	−16 30 35.85	−16	450
52	9.0	13.8	15.6	17.6	19.6	21.7	a	26 47.44	55 0	10.0	10.1	I	46.560	2 26 51.01	16 9 23.50	16	455
53	9.3	0.0	2.1	4.0	6.0	8.2	a	27 33.82	54 50	10.0	9.2	I	44.390	2 27 37.40	15 58 41.17	16	457
54	8.1	42.9	44.8	46.7	48.7	50.9	a	28 16.63	55 20	10.0	9.6	I	44.625	2 28 20.15	16 28 47.60	16	460
55	9.0	59.4	1.2	3.2	5.1	7.3	a	30 33.05	55 12	10.0	10.3	I	44.650	2 30 36.56	16 20 48.76	16	466
56	9.3	41.9	43.6	45.7	47.7	49.9	a	31 15.69	55 54	10.0	10.6	I A	45.380	2 31 19.13	17 6 19.83	17	501
57	8.8	35.2	37.0	38.9	41.0	43.2	a	32 8.99	55 54	"	"	I A	44.540	2 32 12.42	17 6 3.99	17	505
58	9.1	32.8	34.8	37.0	39.2	41.4	c	32 37.04	55 54	"	"	III B	40.770	2 32 40.47	16 58 25.40	17	506
59	8.6	14.5	16.6	18.9	21.2	23.3	c	33 18.90	56 26	10.0	10.6	V	45.900	2 33 22.27	17 35 21.34	17	507
60	8.7	4.8	6.9	8.8	10.6	12.9	a	44 38.81	56 30	10.0	10.4	I B	38.940	2 44 42.07	−17 36 54.33	−17	543
61	8.6	26.0	28.0	30.0	32.0	34.3	a	45 0.09	56 30	"	"	III A	42.970	2 45 3.34	−17 41 41.95	−17	547
62	8.5	33.5	35.3	37.3	39.2	41.5	a	47 7.38	56 30	"	"	I	47.095	2 47 10.62	17 39 45.39	17	554
63	8.8	50.1	52.0	53.9	55.8	58.0	a	50 23.79	55 20	12.5	12.2	I B	49.130	2 50 27.11	16 27 10.28	16	531
64	8.8	41.2	43.0	44.9	46.9	49.2	a	51 15.02	56 14	12.5	12.4	III	43.565	2 51 18.24	17 22 42.45	17	568
65	8.9	22.8	24.9	27.1	29.3	31.5	c	52 27.12	55 52	12.5	11.6	III	45.705	2 52 30.37	17 1 22.41	17	571
66	9.0	25.1	27.3	29.4	31.6	33.7	c	54 29.42	55 58	10.0	8.7	V	48.440	2 54 32.64	17 8 15.00	......	
67	8.4	59.6	1.5	3.5	5.4	7.7	a	57 33.60	56 44	10.0	10.0	I	41.580	2 57 36.72	17 52 3.86	18	517
68	7.7	16.3	18.1	20.1	22.0	24.3	a	0 50.07	55 48	10.0	9.6	III A	42.990	3 0 53.24	16 59 45.38	17	597
69	9.2	28.6	30.8	33.1	35.2	37.4	c	2 33.02	55 48	"	"	III B	44.780	3 2 36.19	16 53 52.04	17	602
70	9.3	37.3	39.1	41.0	43.1	45.4	a	6 11.18	56 22	10.0	10.7	I	47.460	3 6 14.25	−17 31 59.07	−17	611
71	9.3	57.0	58.9	0.8	2.7	5.0	a	6 30.87	56 22	"	"	IV B	40.590	3 6 33.95	−17 26 36.35	−17	612
72	8.8	28.1	30.5	32.3	34.2	36.2	e	7 2.26	55 48	10.0	10.0	V	45.100	3 7 5.39	16 57 15.67	17	614
73	9.4	12.2	14.6	16.6	18.4	20.3	e	7 46.42	55 48	"	"	VII A	41.780	3 7 49.53	16 59 28.14	17	615
74	8.7	55.8	58.0	0.3	2.5	4.7	c	9 0.26	56 16	10.0	9.9	V	(42).605	3 9 3.32	17 24 29.95	17	623
75	9.4	48.6	51.0	53.0	54.8	56.7	e	9 22.73	56 16	"	"	V A	44.270	3 9 25.78	17 28 16.46	17	626
76	9.4	46.4	48.1	50.0	52.0	54.3	a	16 20.10	56 0	10.0	9.3	III	41.260	3 16 23.14	17 8 4.00	17	648
77	9.3	9.3	11.3	13.6	15.7	17.9	c	17 13.56	55 36	10.0	8.4	III	42.540	3 17 16.64	16 44 27.23	16	621
78	8.9	15.4	17.0	19.2	21.0	23.5	a	18 49.08	55 28	10.0	8.3	I	46.520	3 18 52.16	16 37 41.83	16	628
79	8.1	8.3	10.0	12.0	13.9	16.3	a	19 41.86	54 52	10.0	9.4	I	42.210	3 19 45.00	16 0 18.15	16	630
80	9.1	20.9	23.1	25.3	27.5	29.6	c	26 25.28	56 22	10.0	9.0	III	42.645	3 26 28.20	−17 30 35.58	−17	683
81	9.0	20.2	22.4	24.6	26.7	28.8	c	35 24.54	55 50	10.0	10.0	V B	49.760	3 35 27.46	−16 57 42.49	−17	709
82	8.8	32.1	34.3	36.6	38.7	40.8	c	36 36.50	56 32	10.0	11.2	V	44.590	3 36 39.32	17 41 20.47	17	712
83	8.8	28.8	30.7	32.7	34.6	36.9	a	41 2.73	56 18	10.0	11.3	I	44.790	3 41 5.55	17 27 21.70	17	723
84	8.8	24.2	25.9	27.9	29.9	32.2	a	46 58.01	56 18	10.0	10.1	I A	36.310	3 47 0.79	17 27 55.34	17	744
85	9.4	5.2	7.2	9.5	11.7	13.8	c	47 9.48	56 18	"	"	III	41.070	3 47 12.26	17 26 14.20	17	745
86	9.5	12.2	14.3	16.7	18.8	21.0	c	48 16.60	56 18	"	"	III B	41.110	3 48 19.38	17 23 1.61	17	749
87	8.9	37.5	39.4	41.2	43.2	45.5	a	50 11.38	56 34	10.0	10.5	I B	41.410	3 50 14.13	17 39 7.28	17	752
88	8.7	8.4	10.6	12.9	15.0	17.2	c	50 12.82	56 34	"	"	III A	41.840	3 50 15.56	17 45 45.84	17	754
89	8.0	5.9	8.2	10.3	12.6	14.7	c	51 10.34	56 50	10.0	10.4	III	44.695	3 51 13.05	17 59 27.41	18	701
90	9.4	45.3	47.0	49.0	51.0	53.2	a	52 19.19	56 50	"	"	I A	41.350	3 52 21.89	−18 1 36.24	−18	703
91	8.8	40.7	42.6	44.5	46.6	48.8	a	55 14.57	55 56	10.0	10.7	III	41.800	3 55 17.36	−17 4 30.75	−17	771
92	9.0	51.0	52.7	57.0	59.1	1.3	b_2 c_3	56 1.30	56 12	10.0	11.0	III	41.200	3 56 4.06	−17 17 6.76	−17	774

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
93	9.0	9.6	11.8	14.0	16.2	18.4	c	56 14.00	56 12 10.0 11.0	V A	40.340	3 56 16.75	−17 23 20.36	−17 775
94	9.0	48.8	50.5	52.5	54.5	56.8	a	58 22.57	56 0 10.0 10.0	I A	42.775	3 58 25.33	17 12 3.25	17 783
95	9.3	57.4	59.6	1.7	3.9	6.0	c	59 1.72	56 0 " "	V B	43.630	3 59 4.49	17 5 55.29	17 786
96	8.9	3.3	5.0	6.9	9.9	11.3	a	0 37.01	56 0 " "	III B	45.330	4 0 39.77	17 6 26.84	17 789
97	8.9	2.7	4.5	6.5	8.4	10.7	a	9 36.44	55 36 10.0 10.2	I A	42.820	4 9 39.19	16 48 7.81	16 815
98	7.8	18.4	20.3	22.3	24.2	26.4	a	10 52.19	55 36 " "	I B	43.040	4 10 54.95	16 41 44.19	16 820
99	8.9	3.4	5.3	7.2	9.2	11.5	a	12 37.35	56 32 10.0 11.6	I	45.020	4 12 39.98	17 41 40.55	17 837
100	9.2	22.3	24.3	26.2	28.1	30.4	a	13 56.24	56 16 10.0 11.0	I	44.190	4 13 58.89	−17 25 24.00	−17 844
101	8.0	4.7	6.4	10.6	12.8	15.0	b_2 c_3	14 15.00	56 48 10.0 11.4	III	43.035	4 14 17.59	−17 57 5.93	−18 802
102	8.0	47.6	49.4	51.4	53.3	55.6	a	15 21.49	56 32 10.0 10.6	III	46.705	4 15 24.10	17 42 15.55	17 854
103	9.1	38.4	40.3	42.4	44.2	46.5	a	16 12.39	56 32 " "	I	45.625	4 16 15.00	17 41 53.23	17 857
104	9.6	20.2	22.0	24.0	25.9	28.2	a	16 54.01	56 4 10.0 10.8	III	46.350	4 16 56.67	17 14 7.96	17 860
105	9.3	34.4	36.4	38.7	41.0	43.1	c	17 38.72	56 4 " "	III A	44.710	4 17 41.37	17 16 51.32	17 864
106	8.9	30.6	32.6	34.4	36.5	38.7	a	19 4.60	56 38 10.0 11.2	I	42.260	4 19 7.20	17 46 50.85	17 867
107	8.4	24.8	26.6	28.6	30.6	32.9	a	20 58.68	56 16 10.0 10.3	I	41.785	4 21 1.31	17 23 40.60	17 875
108	9.4	50.7	52.5	54.4	56.4	58.6	a	21 24.51	56 16 " "	I A	39.820	4 21 27.13	17 27 17.63	17 876
109	9.4	2.9	4.8	6.8	8.8	11.0	a	22 36.95	56 54 10.0 12.0	I	45.220	4 22 39.49	18 3 50.27	18 841
110	9.3	45.0	46.9	48.8	50.8	53.0	a	23 18.98	56 54 " "	I B	39.530	4 23 21.54	−17 58 47.50	−18 846
111	8.0	23.3	25.6	27.8	30.0	32.1	c	23 27.76	56 54 " "	III	45.020	4 23 30.31	−18 3 48.77	−18 848
112	9.5	11.0	12.8	14.8	16.8	19.0	a	25 44.96	56 50 10.0 10.9	I	46.840	4 25 47.51	18 0 21.99	18 853
113	9.4	3.0	4.8	6.9	8.9	11.3	a	27 37.02	56 36 10.0 11.4	I	45.020	4 27 39.58	17 45 47.34	17 900
114	8.0	54.3	56.3	58.6	0.8	3.0	c	27 58.60	56 48 10.0 11.6	V	42.930	4 28 1.15	17 57 11.90	18 861
115	8.9	23.9	25.8	27.7	29.8	32.0	a	29 57.77	55 56 10.0 10.2	I	47.700	4 30 0.41	17 6 37.01	17 907
116	9.3	8.9	11.0	13.1	15.4	17.5	c	30 13.18	55 56 " "	V B	40.080	4 30 15.83	17 1 0.76	17 909
117	9.5	48.3	50.5	52.8	54.9	57.1	c	31 52.72	56 14 10.0 11.3	V	42.885	4 31 55.32	−17 23 10.72	−17 914

Reduction Elements. Zone 81.

1894.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
December 3.3....	+0.269	+0.033	+0.180	+0.303	+0.049	+0.180
3.5....	+0.337	+0.065				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	19 Ceti		η Ceti		ε Sculptoris		υ Ceti		δ Eridani		τ^6 Eridani	
CIRCLE READING.	50 2 10.05		49 34 9.40		64 24 9.00		60 26 9.30		48 58 9.05		62 24 10.10	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	47.090	6 13.38	46.320	5 58.29	44.640	5 25.87	40.965	4 15.77	42.265	4 40.65	41.350	4 22.94
II Red. to Mer......	.060	1.70	.260	1.70	.560	1.55	.915	1.58	.215	1.70	.305	1.57
VI Inclination	46.865		.060		.390		.720		.030		.090	
VII Refraction	.810	1 11.5	.030	1 10.4	.320	2 5.1	.690	1 45.7	41.970	1 9.4	.040	1 55.2

	γ Eridani		o^1 Eridani		53 Eridani	
CIRCLE READING.	52 38 9.55		45 58 9.70		53 20 9.75	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......		5 46.13	41.095	4 18.48	45.950	5 51.27
II Red. to Mer......		1.67	.040	1.73	.900	1.67
VI Inclination	45.550	2.20	40.880		.680	
VII Refraction	.520	1 19.1	.840	1 2.5	.680	1 21.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
19 Ceti	0 45 2.13	11	+0.48	−10.04	50 9 36.6	60.2
η Ceti	1 3 28.65	11	+0.48	−10.10	49 41 19.8	59.8
ε Sculptoris	1 40 54.25	11	+0.54	−10.13	64 31 41.5	60.4
υ Ceti	1 55 14.05	11	+0.52	−10.12	60 32 12.3	60.0
δ Eridani...........	3 38 23.79	11	+0.48	−10.08	49 4 0.8	60.1
τ^6 Eridani...........	3 42 30.68	11	+0.53	−10.07	62 30 29.8	59.6
γ Eridani...........	3 53 18.58	11	+0.49	−10.08	52 45 18.7	59.8
Groombridge 750..	4 3 58.05	7	+2.51	[−10.04]	313 40	....
o^1 Eridani...........	4 6 54.99	11	+0.47	− 9.96	46 3 32.4	59.7
53 Eridani...........	4 33 33.05	11	+0.49	−10.07	53 27 24.1	59.4

h s
1.352 .... *dt* .... −10.098
Hourly rate .... + 0.0175

° ′ ″
Adopted Equator Point...........38 56 59.89

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
0 45	29.955	38.0	36.5
1 45	29.935	36.6	34.6
2 45	29.925	35.3	33.2
3 45	29.915	34.4	31.8
4 35	29.905	33.5	31.5

Note.
41, 76. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				$D =$ Z. D. S. to 1894.0			
			54°	55°	56°	57°	54°	55°	56°	57°
°	s	h m	s	s	s	s	"	"	"	"
54	+0.495	0 30	......	+14.588	+14.558	......	.....	+16.88	+16.56	.....
55	0.498	1 0	+14.229	14.182	14.133	+14.084	+18.16	17.86	17.56	+17.26
56	0.502	1 30	13.860	13.798	13.734	13.668	18.86	18.58	18.30	18.03
57	+0.506	2 0	13.522	13.444	13.365	13.282	19.27	19.02	18.78	18.53
		2 30	13.218	13.126	13.033	12.939	19.39	19.17	18.97	18.75
		3 0	12.955	12.851	12.745	12.639	19.23	19.06	18.88	18.71
		3 30	+12.737	12.622	12.507	12.389	+18.77	18.63	18.51	18.37
		4 0	......	12.443	12.319	12.193	.....	17.95	17.87	17.78
		4 30	......	+12.320	+12.188	+12.057	.....	+16.99	+16.95	+16.89

APPARENT RIGHT ASCENSION.	R			
	54° 30′	55°	56°	57°
h m	"	"	"	"
0 30	83.54	85.09	88.33	91.71
1 0	83.70	85.25	88.49	91.88
1 30	83.83	85.39	88.63	92.02
2 0	83.97	85.53	88.78	92.17
2 30	84.06	85.62	88.88	92.28
3 0	84.18	85.74	89.00	92.41
3 30	84.28	85.84	89.10	92.51
4 0	84.33	85.90	89.17	92.58
4 30	84.35	85.92	89.19	92.60

1894 DECEMBER 5. ZONE 82. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	°	′	"	"		r	h m s	° ′ "	°	
1	9.0	11.4	13.3	15.2	17.2	19.3	a	53 44.79	53	4	5.2	3.4	I	44.030	0 53 49.79	−14 12 1.84	-14	174
2	9.0	57.1	59.2	1.4	3.5	5.7	c	12 1.38	53	34	10.0	8.0	III	46.020	1 12 6.14	14 42 51.08	14	248
3	8.9	15.0	17.0	19.2	21.4	23.5	c	17 19.22	53	22	10.0	6.8	III	43.910	1 17 23.94	14 30 10.47	14	265
4	8.6	25.1	27.2	29.4	31.5	33.6	c	18 29.36	53	22	"	"	III B	43.330	1 18 34.06	14 26 45.78	14	270
5	8.9	43.6	45.3	47.4	49.3	51.4	a	20 16.91	53	2	10.0	7.6	I	45.570	1 20 21.60	14 10 40.50	14	274
6	8.1	14.8	16.9	19.1	21.3	23.4	c	20 19.10	54	22	10.0	8.1	V	45.890	1 20 23.72	15 30 54.16	15	263
7	9.0	22.7	24.5	26.5	28.4	30.6	a	23 56.10	53	24	10.0	7.8	I	46.650	1 24 0.72	14 33 3.03	14	286
8	9.1	5.8	7.4	11.7	13.8	16.0	$b_2\,c_3$	24 16.03	56	36	10.0	8.9	III	45.975	1 24 20.47	17 46 1.89	17	269
9	8.8	57.6	59.5	1.3	3.3	5.6	a	25 31.02	53	30	10.0	6.8	I B	45.440	1 25 35.63	14 35 26.12	14	290
10	9.1	41.3	43.4	45.5	47.7	49.9	c	25 45.56	53	30	"	"	III A	42.970	1 25 50.16	−14 41 8.96	-14	292
11	9.3	31.5	33.4	35.3	37.2	39.5	a	30 4.92	53	16	10.0	6.6	I	44.850	1 30 9.48	−14 24 28.86	−14	298
12	9.0	3.2	5.3	7.4	9.6	11.8	c	30 7.46	53	46	10.0	7.0	VII	46.200	1 30 12.00	14 55 1.57	15	283
13	9.0	36.0	38.2	40.4	42.6	44.7	c	38 40.38	53	38	10.0	7.0	III A	46.080	1 38 44.83	14 50 12.01	15	305
14	8.9	6.8	8.9	11.2	13.3	15.5	c	39 11.14	53	38	"	"	V B	40.150	1 39 15.58	14 41 51.83	14	326
15	7.5	7.5	9.6	11.7	13.9	16.0	c	40 11.74	53	56	10.0	6.6	V	42.365	1 40 16.15	15 3 49.00	15	307
16	7.8	27.7	29.5	31.5	33.5	35.6	a	42 1.10	53	14	10.0	7.1	I	47.365	1 42 5.54	14 23 20.06	14	335
17	9.3	1.3	3.4	5.5	7.7	9.9	c	43 5.56	53	34	10.0	6.5	III	43.260	1 43 9.96	14 42 4.08	14	336
18	8.2	39.3	41.4	43.5	45.7	47.9	c	44 43.56	53	34	"	"	III	48.265	1 44 47.94	14 43 40.52	14	337
19	8.9	40.5	42.2	44.2	46.3	48.5	a	46 13.95	53	50	10.0	7.4	I B	38.900	1 46 18.32	14 53 26.60	15	326
20	9.3	54.2	56.0	58.0	59.9	2.2	a	47 27.67	53	50	"	"	I B	38.765	1 47 32.02	−14 53 24.32	−15	332
21	8.9	27.0	28.7	32.8	34.9	37.1	$b_2\,c_8$	47 37.12	53	50	"	"	III A	45.620	1 47 41.46	−15 2 6.11	−15	334
22	8.7	1.4	5.6	7.8	10.0	12.0	$b_2\,c_3$	48 9.92	53	50	"	"	III	40.400	1 48 14.26	14 57 11.62	15	336
23	9.1	59.0	1.0	3.3	5.4	7.7	c	49 3.28	53	34	10.0	7.5	III	43.080	1 49 7.62	14 42 2.60	14	354
24	8.6	37.2	39.3	41.3	43.5	45.7	c	49 41.40	53	16	10.0	6.6	V	44.000	1 49 45.76	14 24 20.92	14	356
25	9.1	0.9	3.0	5.3	7.2	9.5	c	53 5.18	53	38	10.0	7.2	III	43.910	1 53 9.48	14 46 19.61	14	366
26	9.4	55.9	58.1	0.3	2.5	4.7	c	58 0.30	53	48	10.0	7.5	III	44.360	1 58 4.53	14 56 30.17	15	358
27	9.2	53.3	55.4	57.5	59.7	1.8	c	58 57.54	53	48	"	"	III	44.260	1 59 1.76	14 56 28.51	15	363
28	8.8	2.2	4.1	6.0	7.9	10.2	a	1 35.61	53	14	10.0	7.0	I	45.950	2 1 39.84	14 22 57.94	14	394
29	8.1	37.6	39.7	41.9	44.0	46.2	c	1 41.88	53	48	10.0	7.4	III	43.750	2 1 46.07	14 56 19.41	15	367
30	8.2	52.4	54.2	56.2	58.0	0.4	a	15 25.87	53	56	10.0	7.2	I	45.760	2 15 29.90	−15 5 0.31	−15	402

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
31	9.0	18.6	20.4	22.3	24.3	26.5	m	16 52.03	53 46 10.0 7.6	I	46.140	2 16 56.06	−14 55 7.77	−15 410
32	8.0	53.8	56.0	58.1	0.3	2.4	c	16 58.12	53 36 10.0 7.6	III	43.875	2 17 2.16	14 44 25.81	14 434
33	9.0	32.4	34.6	36.7	38.8	41.0	c	17 36.70	52 44 10.0 7.5	V	43.860	2 17 40.81	13 52 25.10	14 440
34	9.3	42.0	44.0	46.3	48.3	50.5	c	18 46.22	53 24 10.0 8.5	V	47.920	2 18 50.26	14 33 45.65	14 444
35	9.3	3.9	5.9	8.2	10.3	12.6	c	20 8.18	52 58 10.0 7.7	III	42.625	2 20 12.24	14 6 1.14	14 449
36	8.6	22.6	24.7	27.0	29.0	31.2	c	23 26.90	53 30 10.0 6.7	III	46.240	2 23 30.88	14 39 12.45	14 463
37	8.5	32.1	33.9	35.9	37.8	40.0	a	25 5.48	53 16	....		2 25 9.48	14 25 7	14 468
38	9.2	10.6	12.8	14.9	17.0	19.3	c	25 14.92	53 56 10.0 7.6	III	43.400	2 25 18.86	15 4 20.16	15 439
39	8.6	41.4	43.3	45.0	47.0	49.3	a	28 14.85	53 58 10.0 7.6	I A	43.000	2 28 18.75	15 9 26.11	15 451
40	8.6	45.9	47.7	49.6	51.7	53.8	a	29 19.37	53 58 " "	I B	45.125	2 29 23.27	−15 3 38.93	−15 455
41	8.4	29.5	31.4	33.6	35.9	37.9	c	29 33.66	53 6 10.0 7.1	III	43.525	2 29 37.62	−14 14 21.41	−14 481
42	8.9	52.5	54.3	56.3	58.3	0.5	a	30 25.89	53 6 " "	III	45.730	2 30 29.84	14 15 4.01	14 485
43	7.8	11.5	13.4	15.4	17.4	19.6	a	31 45.09	53 56 10.0 7.5	III	46.910	2 31 48.96	15 5 29.57	15 461
44	9.1	24.8	26.7	28.5	30.5	32.7	a	32 58.27	53 56 " "	I B	46.640	2 33 2.13	15 2 9.03	15 464
45	9.0	10.4	12.2	14.1	16.0	18.3	m	33 43.78	53 36 10.0 7.4	I	42.030	2 33 47.66	14 43 53.65	14 495
46	8.0	0.7	2.5	4.5	6.5	8.7	a	34 34.16	53 36 " "	I	38.820	2 34 38.04	14 42 52.32	14 497
47	9.0	56.0	57.9	0.1	2.4	4.5	c	35 0.18	53 36 " "	III	37.320	2 35 4.06	14 42 25.64	14 498
48	9.2	3.7	5.5	7.6	9.5	11.7	a	36 37.07	52 48 10.0 6.9	I	42.230	2 36 41.00	13 55 56.04	14 507
49	8.9	51.9	53.7	56.0	58.2	0.3	c	36 56.02	52 54 10.0 7.6	III	43.090	2 36 59.94	14 2 15.19	14 508
50	9.3	29.9	32.0	34.2	36.4	38.5	c	37 34.20	52 54 " "	V A	42.840	2 37 38.11	−14 5 26.76	−14 512
51	9.1	37.3	39.5	41.6	43.7	45.9	c	39 41.60	52 54 " "	III (A)	46.550	2 39 45.49	−14 6 36.95	−14 521
52	9.0	1.3	3.5	5.6	7.7	10.0	c	40 5.62	52 54 " "	V B	49.780	2 40 9.51	14 1 12.58	14 523
53	9.5	56.0	57.8	59.8	1.6	3.8	a	42 29.37	53 32 10.0 7.2	I	43.140	2 42 33.18	14 40 17.59	14 531
54	9.5	42.3	44.0	46.0	48.0	50.2	a	43 15.67	53 32 " "	I B	48.210	2 43 19.48	14 38 41.34	14 533
55	9.3	48.1	49.9	52.0	54.0	56.0	a	44 21.65	54 2 10.0 7.8	I A	43.010	2 44 25.40	15 13 31.94	15 497
56	9.0	25.7	27.7	30.0	32.2	34.4	c	44 30.00	54 2 " "	III B	42.390	2 44 33.76	15 6 53.71	15 498
57	9.3	38.2	40.2	42.5	44.7	46.8	c	45 42.48	53 46 10.0 7.7	III	44.370	2 45 46.25	14 54 45.15	15 502
58	9.3	54.5	56.3	58.3	0.2	2.4	a	50 27.96	53 50 10.0 7.4	I	41.410	2 50 31.68	14 57 48.11	15 517
59	8.1	9.0	......	12.9	14.9	17.0	a	51 42.62	54 16 10.0 8.0	I	45.880	2 51 46.29	15 25 15.86	15 519
60	9.1	23.0	25.3	27.5	29.7	31.7	c	52 27.44	54 34 10.0 6.7	III	43.400	2 52 31.07	−15 42 30.69	−15 522
61	9.2	18.1	19.9	22.0	23.9	26.2	a	54 51.67	54 6 10.0 8.3	I	40.940	2 54 55.33	−15 13 41.84	−15 526
62	9.1	2.4	4.1	6.1	8.1	10.3	a	57 35.77	53 30 10.0 7.2	I	44.420	2 57 39.46	14 38 47.37	14 589
63	9.2	51.8	54.0	56.1	58.3	0.4	c	57 56.12	53 52 10.0 7.0	III	45.570	2 57 59.77	15 1 12.45	15 533
64	9.5	57.4	59.4	1.3	3.3	5.4	a	59 30.96	53 40 10.0 7.6	I A	42.780	2 59 34.62	14 51 31.80	15 536
65	8.0	44.8	46.8	48.7	50.7	52.9	a	0 18.37	53 40 " "	III B	49.790	3 0 22.03	14 47 20.22	14 598
66	9.0	33.5	35.6	37.9	39.9	42.0	c	0 37.78	53 40 " "	V B	39.990	3 0 41.44	14 44 14.01	14 599
67	9.4	3.0	5.1	7.3	9.5	11.7	c	2 7.32	54 2 10.0 6.6	III	40.620	3 2 10.92	15 9 39.25	15 543
68	8.2	48.5	50.6	52.8	55.0	57.2	c	5 52.82	53 38 10.0 6.7	III	46.625	3 5 56.43	14 47 34.79	14 611
69	8.2	14.1	16.2	18.4	20.4	22.6	c	10 18.34	53 2 10.0 6.7	III	47.695	3 10 21.97	14 11 55.30	14 629
70	9.2	4.5	6.6	8.8	11.0	13.0	c	11 8.78	53 22 10.0 7.0	V	44.270	3 11 12.37	−14 30 52.71	−14 632
71	9.4	4.7	6.4	8.5	10.3	12.5	a	12 37.97	52 52 10.0 7.0	III	43.875	3 12 41.61	−14 0 42.56	−14 637
72	8.6	18.0	19.7	23.9	26.0	28.3	b_2 c_3	13 28.18	53 6 10.0 6.6	III (B)	44.500	3 13 31.79	14 11 41.49	14 641
73	9.2	34.6	36.7	38.8	41.0	43.2	c	13 38.86	53 6 " "	V	41.650	3 13 42.46	14 14 2.44	14 643
74	9.0	49.8	51.9	54.0	56.3	58.4	c	17 54.08	52 56 10.0 6.6	III A	44.140	3 17 57.66	14 8 4.06	14 653
75	9.0	50.7	52.5	54.3	56.3	58.3	a	19 23.86	52 32 10.0 6.5	I	43.740	3 19 27.48	13 40 39.47	13 642
76	8.9	37.6	39.5	41.3	43.2	45.5	a	20 10.89	52 46 10.0 6.6	I	44.290	3 20 14.48	13 54 51.00	14 663
77	8.0	11.4	13.4	15.7	17.7	19.8	c	20 15.60	53 20 10.0 6.5	V	41.905	3 20 19.14	14 28 10.56	14 665
78	9.1	46.9	49.0	51.2	53.4	55.5	c	22 51.20	54 24 10.0 6.7	III	45.890	3 22 54.60	15 33 29.28	15 601
79	9.2	23.8	25.5	27.4	29.4	31.7	a	25 57.21	54 2 10.0 6.6	I	47.280	3 26 0.63	15 11 54.15	15 609
80	8.0	21.3	23.5	25.6	27.7	29.9	c	26 25.60	52 42 10.0 7.6	III	42.605	3 26 29.16	−13 50 23.27	−13 674
81	9.3	33.1	35.0	37.1	39.0	41.2	a	28 6.68	53 42 10.0 7.8	I	45.520	3 28 10.13	−14 51 20.87	−15 614
82	9.1	15.0	16.8	18.7	20.7	22.9	a	28 48.41	53 42 " "	I B	45.230	3 28 51.87	14 48 1.76	14 697
83	8.5	49.8	51.6	53.5	55.4	57.7	a	29 23.10	53 2 10.0 7.9	III	41.125	3 29 26.61	14 9 57.16	14 699
84	9.2	21.6	23.5	25.2	27.3	29.6	a	31 54.91	52 46 10.0 7.7	I	43.390	3 31 58.43	13 54 38.85	14 703
85	8.3	59.9	2.0	4.2	6.4	8.6	c	32 4.22	53 18 10.0 8.4	V B	49.680	3 32 7.70	14 25 31.33	14 706
86	7.8	57.1	59.0	0.9	2.9	5.1	a	35 30.70	54 24 10.0 8.2	I	44.170	3 35 34.03	15 33 0.12	15 634
87	8.9	31.9	33.6	35.7	37.6	39.8	a	36 5.35	53 54 10.0 7.4	III	43.735	3 36 8.73	15 2 52.11	15 636
88	9.3	46.4	48.1	50.1	52.0	54.3	a	39 19.72	53 16 10.0 7.0	I	43.665	3 39 23.14	14 24 48.16	14 738
89	8.8	20.6	22.8	24.9	27.0	29.3	c	39 24.92	52 36 10.0 7.3	V B	48.160	3 39 28.42	13 43 2.64	13 725
90	8.8	57.0	59.1	1.3	3.4	5.5	c	40 1.26	52 36 " "	V	50.050	3 40 4.75	−13 46 52.98	−13 729
91	8.5	40.9	42.8	44.7	46.8	48.9	a	42 14.41	53 38 10.0 6.5	I	45.120	3 42 17.78	−14 47 18.05	−14 749
92	8.7	36.8	38.9	41.1	43.2	45.4	c	42 41.08	53 56 10.0 7.3	III	43.235	3 42 44.42	15 4 45.26	15 659
93	8.7	18.2	20.2	22.4	24.7	26.8	c	46 22.46	53 52 10.0 6.8	V	42.430	3 46 25.78	15 0 32.64	15 677
94	9.1	7.2	9.3	11.5	13.6	15.8	c	48 11.48	53 16 10.0 6.6	III	42.660	3 48 14.86	14 24 34.23	14 766
95	9.4	37.8	39.8	42.0	44.2	46.4	c	55 42.04	52 46 10.0 6.3	III	45.565	3 55 45.43	13 55 31.58	14 797
96	9.3	51.2	53.4	55.5	57.6	59.7	c	56 55.48	52 56 10.0 7.0	III	48.140	3 56 58.84	14 6 22.32	14 803
97	9.0	52.7	54.9	57.0	59.1	1.2	c	58 56.98	52 36 10.0 6.4	III	46.050	3 59 0.37	13 45 41.87	13 804
98	8.9	58.3	0.4	2.7	4.8	7.0	c	0 2.64	53 22 10.0 5.6	III	44.870	4 0 5.94	14 31 21.42	14 813
99	8.8	47.0	48.8	50.9	52.8	55.0	a	1 20.52	53 50 10.0 6.4	III	46.330	4 1 23.76	14 59 51.73	15 717
100	8.9	0.4	2.3	4.2	6.1	8.4	a	9 33.78	52 58 10.0 6.8	I	47.030	4 9 37.08	−14 8 4.50	−14 844

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B.D.	
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°	
101	9.5	55.6	57.7	59.9	2.0	4.2	c	9 59.88	53 56 10.0	6.6	III	47.080	4 10 3.07	−15 6 10.27	−15	749
102	8.8	......	......	......	......	......	......	....	53 2 10.0	7.1	III	42.760	4 11 45	14 10 45.75	14	854
103	8.1	40.8	42.6	44.7	46.5	48.8	a	15 14.27	53 40 10.0	7.1	I	46.350	4 15 17.47	14 49 56.09	14	872
104	9.2	26.4	28.6	30.8	33.0	35.2	(c)	15 30.80	53 52 10.0	6.6	III	41.020	4 15 33.98	15 0 16.18	15	767
105	8.2	47.0	49.0	41.2	53.4	55.5	c	16 51.22	53 22 10.0	6.5	III	42.170	4 16 54.46	14 30 37.37	14	881
106	8.9	32.1	34.0	35.8	37.8	40.1	a	19 5.47	53 6 10.0	6.9	I	42.940	4 19 8.73	14 14 50.62	14	892
107	8.8	7.2	9.3	11.6	13.7	15.9	c	19 11.54	53 6 "	"	III	42.670	4 19 14.80	14 14 47.40	14	893
108	9.1	50.0	52.1	54.3	56.5	58.7	c	21 54.32	53 18 10.0	6.9	III	46.520	4 21 57.54	14 28 3.08	14	901
109	9.3	5.1	6.9	8.8	10.7	13.0	a	23 38.41	53 6 10.0	6.0	I B	43.225	4 23 41.66	14 11 43.85	14	907[1]
110	9.4	34.6	36.3	38.5	40.9	42.9	c	23 38.64	53 6 "	"	V B	44.180	4 23 41.89	−14 12 5.84	−14	907[2]
111	8.7	38.5	40.7	42.9	44.9	47.0	c	24 42.80	53 6 "	"	V	47.490	4 24 46.04	−14 16 23.68	−14	913
112	9.0	6.2	8.1	10.3	12.5	14.7	c	25 10.36	53 6 "	"	V	47.630	4 25 13.60	14 16 26.56	14	916
113	9.2	32.9	34.9	37.1	39.4	41.5	c	27 37.16	52 38 10.0	6.9	III	46.300	4 27 40.45	13 47 59.50	13	910
114	8.9	51.7	53.9	56.1	58.2	0.4	c	31 56.06	53 42 10.0	7.2	III	43.600	4 31 59.21	−14 51 12.82	−14	929

Reduction Elements. Zone 82.

	OBSERVED.			ADOPTED.		
1894.	c	b	a	c	b	a
	s	s	s	s	s	s
December 5.3....	+0.310	+0.123	+0.102	+0.322	+0.110	+0.102
5.5....	+0.335	+0.098				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	22 Ceti		η Ceti		υ Ceti		67 Ceti		γ Eridani		o¹ Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	50 40 4.90		49 34 9.00		60 26 8.55		45 44 8.85		52 38 8.70		45 58 8.65	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.720	5 47.50	46.330	5 58.54	41.000	4 16.48	46.675	6 5.62	45.830	5 49.29		4 17.06
II Red. to Mer......	.680	1.69	.275	1.70	40.970	1.58	.650	1.73	.755	1.67		1.73
VI Inclination	.530		.100		.740		.470		.600		40.910	2.20
VII Refraction.......	.495	1 13.3	.025	1 10.5	.725	1 45.7	.410	1 1.8	.610	1 19.1	.870	1 2.5

	53 Eridani		54 Eridani	
	° ′ ″		° ′ ″	
CIRCLE READING.	53 20 8.25		58 42 8.30	
	r	′ ″	r	′ ″
I Microm. Eq......	46.025	5 53.58	44.530	5 24.36
II Red. to Mer......	45.995	1.65	.505	1.60
VI Inclination		−0.59	.320	
VII Refraction.......	.750	1 21.2	.240	1 39.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
22 Ceti	0 50 55.49	11	+0.48	−9.86	50 47 7.4	59.7
η Ceti	1 3 28.37	11	+0.48	−9.83	49 41 19.7	59.5
υ Ceti	1 55 13.77	11	+0.50	−9.83	60 32 12.3	59.7
67 Ceti	2 11 54.94	11	+0.48	−9.83	45 51 18.0	60.1
γ Eridani...........	3 53 18.33	11	+0.48	−9.81	52 45 18.8	59.6
Groombridge 750..	4 3 56.37	8	+3.94	[−9.81]	313 40	....
o¹ Eridani...........	4 6 54.81	11	+0.48	−9.77	46 3 32.1	59.1
53 Eridani...........	4 33 32.81	11	+0.48	−9.80	53 27 24.1	59.0
54 Eridani...........	4 36 1.55	11	+0.50	−9.84	58 49 13.6	59.1

h 1.508............	*dt*	s −9.838
	Hourly rate	+0.0119
	Adopted Equator Point	° ′ ″ 38 56 59.48

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
0 55	29.875	35.0	34.1
1 50	29.875	34.6	33.5
2 50	29.875	33.1	31.7
3 40	29.875	32.9	31.2
4 35	29.875	32.3	30.7

Note.

11, 53 Eridani. Thin clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				$D =$ Z. D. S. to 1894.0			
			52°	53°	54°	55°	52°	53°	54°	55°
°	s	h m	s	s	s	s	″	″	″	″
52	+0.482	1 0	......	+14.301	+14.254	+14.207	.....	+18.20	+17.89	+17.58
53	0.484	1 30	......	13.944	13.883	13.818	.....	18.84	18.55	18.28
54	0.486	2 0	+13.694	13.617	13.540	13.462	+19.47	19.21	18.96	18.70
55	0.488	2 30	13.412	13.322	13.232	13.140	19.50	19.28	19.06	18.85
56	0.490	3 0	13.167	13.067	12.963	12.861	19.25	19.07	18.89	18.71
57	+0.492	3 30	12.964	12.851	12.740	12.625	18.70	18.55	18.41	18.27
		4 0	12.805	12.686	12.564	12.442	17.86	17.76	17.66	17.56
		4 30	+12.693	+12.567	+12.440	+12.313	+16.76	+16.71	+16.66	+16.59

APPARENT RIGHT ASCENSION.	*R*					
	52° 30′	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″
0 30	77.93	79.34	82.28	85.35	88.59	91.98
1 0	77.96	79.38	82.32	85.39	88.63	92.02
1 30	78.02	79.43	82.38	85.45	88.70	92.09
2 0	78.11	79.52	82.47	85.55	.....	.....
2 30	78.25	79.67	82.62	85.70	.....	.....
3 0	78.38	79.80	82.76	85.84	.....	.....
3 30	78.42	79.84	82.79	85.88	.....	.....
4 0	78.47	79.89	82.85	85.94	.....	.....
4 30	78.52	79.95	82.91	86.00	.....	.....

1894 DECEMBER 13. ZONE 83. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.2	38.9	40.7	42.6	44.4	46.7	a	18 12.23	53 32 10.0 6.2	I B 47.520	1 18 15.61	−14 38 7.24	−14 268
2	8.8	53.0	54.8	56.8	58.7	1.0	a	18 26.44	53 32 " "	III A 44.950	1 18 29.81	14 43 48.16	14 269
3	9.4	59.1	0.9	2.7	4.7	7.0	a	20 32.53	54 4 10.0 5.2	I A 44.360	1 20 35.86	15 15 36.30	15 264
4	.....	34.4	36.6	38.8	40.9	43.1	c	20 38.76	54 4 " "	V B 37.900	1 20 42.10	15 7 7.70	15 266
5	9.1	54.4	56.3	58.3	0.2	2.4	a	23 28.14	55 16 10.0 7.9	I 47.560	1 23 31.36	16 25 28.42	16 247
6	9.2	28.4	30.1	32.1	34.2	36.2	a	24 2.02	55 16 " "	III 42.185	1 24 5.24	16 23 47.35	16 248
7	8.5	30.8	33.0	35.2	37.4	39.4	c	27 35.16	54 50 10.0 6.2	III 42.385	1 27 38.36	15 57 49.85	16 259
8	6.	29.6	31.3	33.3	35.3	37.5	a	31 3.15	54 46 10.0 6.2	I 45.170	1 31 6.31	15 54 41.88	16 270
9	9.0	21.1	23.2	25.5	27.6	29.7	c	31 25.42	55 20 10.0 7.4	III A 43.970	1 31 28.53	16 31 37.58	16 273
10	8.8	26.6	28.4	30.8	33.0	35.2	c	32 30.80	55 20 " "	III A 40.370	1 32 33.90	−16 30 28.74	−16 278
11	8.4	26.3	28.2	30.5	32.7	34.9	c	33 30.52	55 20 " "	III B 36.550	1 33 33.62	−16 22 47.37	−16 279
12	8.9	17.7	19.9	22.1	24.2	26.3	c	34 22.04	55 20 " "	III A 39.835	1 34 25.12	16 30 18.86	16 283
13	9.4	8.1	10.0	11.9	13.9	16.1	a	44 41.70	54 26 10.0 6.0	I 47.300	1 44 44.72	15 35 24.87	15 324
14	9.1	1.6	3.5	5.3	7.3	9.7	a	46 35.24	54 48 10.0 6.0	I 45.930	1 46 38.21	15 57 0.04	16 320
15	8.9	37.3	39.0	43.3	45.4	47.8	b_2 c_3	46 47.63	55 40 10.0 6.7	III 43.010	1 46 50.54	16 48 8.84	17 332
16	6.8	18.8	21.3	23.1	24.9	27.0	e	46 53.14	55 0 10.0 7.0	V 44.140	1 46 56.09	16 8 30.54	16 322
17	8.8	12.6	14.7	16.8	19.1	21.2	c	48 16.88	56 6 10.0 7.8	V 40.670	1 48 19.74	17 13 27.91	17 340
18	9.0	5.2	7.3	9.5	11.6	13.8	c	49 9.48	55 20 9.3 6.7	V 44.890	1 49 12.38	16 28 45.96	16 327
19	9.6	2.6	4.9	7.1	9.3	11.4	c	58 7.06	55 40 10.0 7.5	III 42.620	1 58 9.82	16 48 4.65	17 378
20	8.9	47.6	49.6	51.9	54.0	56.3	c	59 51.88	55 44 10.0 7.7	III 42.005	1 59 54.62	−16 51 53.61	−17 383
21	8.7	42.6	44.4	46.4	48.3	50.6	a	26 16.16	54 26 10.0 7.7	I 44.400	2 26 18.71	−15 34 41.47	−15 442
22	9.3	17.1	19.2	21.4	23.4	25.6	c	26 21.34	54 26 " "	III A 40.550	2 26 23.89	15 36 43.99	15 443
23	9.2	3.2	5.4	7.6	9.7	11.9	c	27 7.56	54 26 " "	III 39.140	2 27 10.11	15 33 2.70	15 448
24	9.3	2.3	4.4	6.6	8.8	10.9	c	31 6.60	55 26 9.0 6.8	III 42.685	2 31 9.02	16 34 13.91	16 467
25	9.0	32.0	34.1	36.3	38.6	40.7	c	44 36.34	55 24 10.0 7.2	III 46.345	2 44 38.62	16 33 29.17	16 509
26	9.1	53.5	55.5	57.7	0.0	2.2	c	45 57.78	55 24 " "	III 40.700	2 46 0.05	16 31 41.31	16 510
27	8.6	38.1	39.9	41.9	43.8	46.0	a	51 11.77	55 20 10.0 7.7	I 41.130	2 51 14.00	16 27 49.46	16 532
28	8.9	43.1	44.8	46.8	48.7	51.1	a	52 16.68	55 2 10.5 8.5	I B 44.390	2 52 18.94	16 7 38.37	16 534
29	8.0	44.8	46.5	48.4	50.3	52.6	a	53 18.32	55 2 " "	I A 45.930	2 53 20.55	16 14 36.61	16 538
30	9.1	40.4	42.5	44.7	46.8	49.0	c	53 44.68	55 2 " "	III 45.740	2 53 46.92	−16 11 20.54	−16 539
31	8.7	56.7	58.8	1.1	3.2	5.4	c	55 1.04	55 58 10.0 8.6	III 45.830	2 55 3.17	−17 7 25.28	−17 580
32	9.0	42.6	45.1	46.8	48.7	50.7	e	55 16.75	55 58 " "	VII 40.545	2 55 18.88	−17 5 47.29	−17 582

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°	
33	8.6	42.1	44.0	46.2	48.4	50.6	c	1 46.26	55 30	10.0	8.1	III B	43.040	3 1 48.38	−16 35 18.67	−16	561
34	9.2	19.1	21.4	23.6	25.7	27.9	c	2 23.54	55 30	"	"	III A	47.105	3 2 25.64	16 43 5.21	16	566
35	9.0	10.3	12.2	14.1	16.1	18.4	a	5 43.99	54 54	10.0	8.0	I	46.920	3 5 46.13	16 3 44.62	16	581
36	7.0	2.3	4.2	6.1	8.1	10.3	a	6 36.02	55 14	9.2	7.2	I	48.205	3 6 38.11	16 24 9.79	16	587
37	8.6	1.5	3.2	5.2	7.1	9.4	a	7 35.10	55 14	"	"	I A	43.970	3 7 37.18	16 26 3.40	16	590
38	8.8	22.7	24.6	26.5	28.4	30.7	a	7 56.40	55 14	"	"	III B	49.620	3 7 58.49	16 21 25.59	16	593
39	9.1	2.3	4.2	6.3	8.3	10.4	a	9 36.22	55 54	10.0	8.2	I	42.055	3 9 38.22	17 2 15.75	17	629
40	9.0	32.3	34.0	36.1	38.1	40.2	a	10 5.85	54 30	10.0	7.8	I	41.990	3 10 7.99	−15 38 10.36	−15	563
41	9.3	10.3	12.3	14.5	16.6	18.7	c	10 14.48	54 52	10.0	8.0	V	43.480	3 10 16.58	−16 0 43.89	−16	600
42	8.8	6.3	8.4	10.6	12.8	13.9	c	14 10.60	54 6	10.0	6.5	III	44.600	3 14 12.76	15 15 2.15	15	578
43	9.3	57.7	59.8	1.9	4.1	6.3	c	16 1.96	55 28	10.0	8.0	III	42.385	3 16 3.96	16 36 25.02	16	617
44	8.7	42.6	44.7	46.9	49.1	51.1	c	16 46.88	55 0	10.0	8.4	V	45.425	3 16 48.92	16 9 24.25	16	620
45	9.4	47.6	49.8	52.0	54.2	56.2	c	17 51.96	55 12	10.0	7.8	III	41.480	3 17 53.97	16 20 7.47	16	625
46	8.0	38.8	40.9	43.1	45.4	47.5	c	18 43.14	54 6	9.5	7.0	III	41.440	3 18 45.26	15 14 3.23	15	589
47	8.1	10.1	11.9	13.9	15.9	18.1	a	21 43.70	54 34	9.5	6.7	I	43.735	3 21 45.75	15 42 47.63	15	598
48	9.4	50.3	52.4	54.8	56.9	59.0	c	21 54.68	54 58	9.5	7.5	V	45.815	3 21 56.68	16 7 32.87	16	635
49	9.3	18.3	20.1	22.1	24.1	26.3	a	25 51.97	55 2	10.0	8.1	I	46.460	3 25 53.93	16 11 43.84	16	648
50	9.1	9.8	12.1	14.2	16.3	18.5	c	26 14.18	54 48	10.0	7.5	III B	45.420	3 26 16.17	−15 54 11.18	−16	650
51	9.3	9.8	11.9	14.0	16.3	18.4	c	27 14.08	54 48	"	"	III A	47.750	3 27 16.05	−16 1 24.55	−16	652
52	9.0	59.8	1.7	3.6	5.6	7.8	a	28 33.44	54 48	"	"	I B	42.260	3 28 35.41	15 53 9.51	16	656
53	7.0	31.8	33.6	35.6	37.6	39.7	a	29 5.35	54 18	10.0	6.6	III	46.150	3 29 7.36	15 27 38.25	15	617
54	9.2	16.5	18.1	22.3	24.5	26.6	b_2 c_3	29 26.65	55 0	10.0	8.1	III	46.860	3 29 28.58	16 9 54.79	16	657
55	9.0	14.0	16.1	18.2	20.3	22.5	c	30 18.22	55 16	10.0	8.5	V	41.170	3 30 20.12	16 24 8.68	16	663
56	7.9	32.6	34.5	36.5	38.5	40.7	a	33 6.29	54 40	10.0	6.8	I	43.325	3 33 8.24	15 48 44.82	15	627
57	9.2	6.6	8.4	10.4	12.4	14.7	a	33 40.29	55 2	9.0	6.5	III B	41.930	3 33 42.20	16 7 6.83	16	674
58	9.2	57.7	59.3	1.3	3.3	5.6	a	34 31.24	55 2	"	"	III A	46.540	3 34 33.13	16 15 3.92	16	678
59	8.1	43.6	45.6	47.9	50.1	52.2	c	34 47.88	55 2	"	"	V B	35.050	3 34 49.78	16 4 56.97	16	679
60	9.1	52.2	54.1	56.6	58.8	1.0	c	35 56.54	55 12	10.0	8.7	V	42.550	3 35 58.41	−16 20 37.31	−16	683
61	8.1	48.5	50.6	52.9	55.0	57.2	c	40 52.84	54 32	10.0	7.6	III	44.310	3 40 54.76	−15 41 8.80	−15	649
62	8.9	32.5	34.5	36.7	38.8	40.9	c	42 36.68	54 32	"	"	III B	46.585	3 42 38.59	15 38 39.33	15	657
63	9.3	35.7	37.8	40.1	42.3	44.5	c	43 40.08	55 6	10.5	9.2	III	42.360	3 43 41.91	16 14 35.21	16	705
64	9.3	12.9	14.9	17.2	19.3	21.5	c	45 17.16	54 50	10.0	7.7	III	47.720	3 45 19.01	16 0 16.95	16	708
65	8.4	3.1	5.1	7.4	9.6	11.8	c	46 7.40	54 50	"	"	V B	41.515	3 46 9.25	15 55 6.15	16	710
66	8.0	53.4	55.5	57.7	59.8	2.0	c	47 57.68	54 54	10.0	7.5	III	41.830	3 47 59.51	16 2 25.11	16	717
67	9.2	36.7	38.5	40.5	42.5	44.7	a	50 10.41	55 20	10.0	8.2	I	45.640	3 50 12.17	16 29 38.83	16	728
68	9.2	40.5	42.6	44.9	47.1	49.3	c	50 44.88	55 20	"	"	III B	45.675	3 50 46.64	16 26 27.88	16	732
69	9.0	30.5	32.5	34.8	36.9	39.2	c	52 34.78	55 18	10.0	8.3	III B	41.150	3 52 36.54	16 23 1.75	16	741
70	9.1	28.1	30.1	32.3	34.5	36.7	c	53 32.34	55 18	"	"	III A	48.060	3 53 34.07	−16 31 43.05	−16	745
71	9.3	47.3	49.2	51.0	53.0	55.1	a	57 20.94	55 16	10.0	8.0	I B	39.025	3 57 22.67	−16 20 20.74	−16	760
72	9.1	4.0	6.2	8.3	10.5	12.6	c	58 8.32	55 16	"	"	III A	42.350	3 58 10.03	16 27 55.13	16	765
73	9.0	28.7	30.4	32.5	34.5	36.6	a	0 2.20	54 10	10.0	7.8	I	41.900	4 0 4.04	15 18 27.56	15	712
74	9.4	3.1	5.0	7.1	8.9	11.1	a	0 36.80	54 48	10.0	8.5	III	46.675	4 0 38.56	15 58 3.58	16	774
75	9.3	41.9	43.7	45.7	47.7	49.9	a	2 15.60	55 10	10.0	7.7	I A	46.480	4 2 17.31	16 23 13.82	16	781
76	8.0	13.4	15.0	19.2	21.3	23.6	b_2 c_3	2 23.55	55 10	"	"	III B	42.230	4 2 25.27	16 15 25.91	16	782
77	8.8	51.4	53.7	55.9	58.1	2.3	c_2 d_1	2 53.71	54 32	10.0	7.5	VI	47.800	4 2 55.49	15 42 27.43	15	720
78	9.0	1.6	3.5	5.6	7.3	9.6	a	5 35.24	54 34	10.0	8.0	I	42.910	4 5 37.01	15 42 50.54	15	731
79	8.5	55.2	57.1	59.0	1.0	3.1	a	9 28.88	55 6	10.0	7.8	I	42.620	4 9 30.56	16 14 48.16	16	814
80	8.1	52.7	54.5	56.5	58.5	0.7	a	10 26.40	55 16	10.0	8.0	I	45.880	4 10 28.05	−16 25 51.73	−16	817
81	9.0	5.0	6.9	8.8	10.9	13.1	a	10 38.77	55 16	"	"	III	48.780	4 10 40.42	−16 26 49.43	−16	819
82	9.3	54.9	56.7	58.7	0.7	2.8	a	11 28.42	54 12	10.0	7.5	III	41.740	4 11 30.20	15 20 31.26	15	755
83	9.1	44.9	46.7	48.7	50.7	52.8	a	12 18.57	55 12	10.0	9.5	III	41.350	4 12 20.22	16 20 28.09	16	826
84	9.0	55.5	57.1	1.4	3.5	5.8	b_2 c_3	13 5.70	54 52	9.5	7.6	III	43.700	4 13 7.39	16 1 11.34	16	829
85	8.9	38.1	40.1	44.3	45.9	48.7	c_4 d_3	13 35.78	55 30	10.0	8.6	VI B	49.325	4 13 37.39	16 37 51.94	16	830
86	8.8	36.6	38.6	40.8	43.1	45.1	c	14 40.84	55 30	"	"	VI B	41.310	4 14 42.45	16 35 17.57	16	832
87	8.0	31.6	33.7	35.9	38.1	40.3	c	15 35.92	55 30	"	"	V A	37.760	4 15 37.51	16 40 37.27	16	838
88	9.4	8.3	10.3	12.6	16.8	18.5	c_3 d_2	16 8.25	55 30	"	"	VI (B)	42.800	4 16 9.85	16 35 46.79	16	840
89	8.9	15.5	17.8	20.1	22.2	24.3	c	18 19.98	54 56	9.0	6.7	III	46.520	4 18 21.63	16 6 7.26	16	845
90	8.9	32.3	34.3	36.5	38.6	40.8	c	19 36.50	55 6	10.0	7.8	III	46.890	4 19 38.13	−16 16 16.48	−16	849
91	9.5	27.4	29.5	31.8	33.9	36.1	c	23 31.74	54 14	10.0	8.0	V	46.615	4 23 33.46	−15 24 12.21	−15	794
92	……	54.6	56.7	58.7	0.8	2.8	a	27 28.50	55 0	10.0	7.8	I	47.150	4 27 30.11	16 10 22.71	16	886
93	……	9.3	11.1	13.2	15.1	17.3	a	32 42.94	54 44	10.0	7.9	I	46.040	4 32 44.56	15 54 2.96	15	824
94	……	56.1	25.4	27.5	29.7	31.8	a_1 c_4	42 29.70	55 10	9.2	7.7	VI	47.620	4 42 31.23	16 20 43.04	16	947
95	……	33.5	35.3	37.2	39.1	41.5	a	44 7.13	55 10	"	"	III	47.230	4 44 8.65	16 20 33.72	16	958
96	……	6.1	7.7	9.7	11.7	14.0	a	45 39.66	55 10	"	"	I A	46.260	4 45 41.17	16 23 28.40	16	964
97	……	19.7	21.8	24.1	26.1	28.3	c	58 24.00	54 52	10.0	8.3	V	41.460	4 58 25.54	−16 0 51.05	−16	1027

Reduction Elements. Zone 83.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
December 13.3....	+0.099	+0.101	+0.167	+0.132	+0.100	+0.140
13.5....	+0.166	+0.099	+0.114			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		22 Ceti		η Ceti		ε Sculptoris		υ Ceti		o^1 Eridani		53 Eridani	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	50 40 8.85		49 34 7.85		64 24 8.60		60 26 8.30		45 58 8.75		53 20 8.75	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	45.340	5 39.88	46.160	5 55.40	44.505	5 23.62	40.860	4 14.71	41.050	4 16.85	45.930	5 50.79
II	Red. to Mer.	.295	1.69	.110	1.70	.465	1.55	.820	1.56	40.960	1.73		1.65
VI	Inclination	.140		45.930		.250			−0.59	.790		.710	0.59
VII	Refraction	.060	1 12.3	.870	1 9.6	.220	2 3.4	.620	1 44.2	.715	1 1.3	.690	1 19.6

		ε Leporis		β Eridani		β Orionis	
		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	61 20 9.35		44 4 8.80		47 10 7.75	
		r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	44.940	5 31.81		4 56.87	43.070	4 56.27
II	Red. to Mer.	.845	1.58		1.75	.030	1.72
VI	Inclination	.720		42.990	2.20	42.820	
VII	Refraction	.645	1 48.3	.940	57.4	.815	1 4.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
22 Ceti	0 50 56.72	11	+0.31	−10.99	50 47 2.7	54.2
43 H. Cephei	0 54 33.54	8	+1.31	[−11.33]	313 14	....
η Ceti	1 3 29.66	11	+0.31	−11.01	49 41 14.6	53.6
ε Sculptoris	1 40 55.37	11	+0.33	−11.12	64 31 37.2	54.6
υ Ceti	1 55 15.11	11	+0.33	−11.05	60 32 8.2	54.4
o^1 Eridani	4 6 56.21	11	+0.30	−10.95	46 3 28.6	54.4
53 Eridani	4 33 34.25	11	+0.31	−11.01	53 27 21.4	54.7
ε Ursae Minoris s. p.	4 56 46.81	8	−0.47	[−11.11]	301 10	....
ε Leporis	5 1 13.00	11	+0.33	−10.95	61 27 31.0	54.6
β Eridani	5 2 53.10	10	+0.30	−10.92	44 10 7.0	55.3
β Orionis	5 9 41.39	11	+0.31	−10.95	47 16 9.7	55.3

h 1.378 .... *dt* .... s −11.042

Hourly rate .... + 0.0253

Adopted Equator Point .... 38° 56′ 54.57″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
0 45	29.865	41.0	40.4
1 36	29.855	40.0	39.6
2 21	29.865	40.6	40.3
2 57	29.865	40.2	40.3
3 54	29.855	40.0	40.0
5 12	29.855	39.9	39.3

Notes.

17. Faint close companion, s. p.

91, 92, 94, 97. Clouds.

43. H. Cephei. Steady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					$D=$ Z. D. S. to 1894.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	+0.313	1 0	+14.370	+14.324	+14.277	+14.233	......	+17.36	+17.04	+16.71	+16.39	.....
54	0.315	1 30	+14.003	13.941	13.879	13.818	+13.754	+17.89	17.58	17.28	16.97	+16.67
55	0.316	2 0	......	13.584	13.508	13.429	13.350	.....	17.85	17.57	17.29	17.02
56	0.317	2 30	......	13.259	13.168	13.077	12.984	.....	17.82	17.57	17.32	17.07
57	+0.319	3 0	......	12.972	12.870	12.766	+12.660	.....	17.50	17.29	17.07	+16.86
		3 30	......	12.728	12.614	12.501	......	.....	16.91	16.73	16.54	.....
		4 0	......	12.529	12.409	12.286	......	.....	16.04	15.90	15.76	.....
		4 30	......	12.383	12.256	12.125	......	....	14.91	14.82	14.72	.....
		5 0	......	+12.289	+12.157	+12.023	......	.....	+13.56	+13.50	+13.45	.....

APPARENT RIGHT ASCENSION.	R			
	53° 30′	54° 30′	55° 30′	56° 30′
h m	″	″	″	″
1 0	79.78	82.74	85.86	89.13
1 30	79.84	82.79	85.92	89.19
2 0	79.80	82.76	85.88	89.15
2 30	79.76	82.72	85.84	89.10
3 0	79.76	82.72	85.84	89.10
3 30	79.78	82.74	85.86	89.13
4 0	79.78	82.74	85.86	89.13
4 30	79.84	82.79	85.92	89.19
5 0	79.87	82.83	85.96	89.23

1894 DECEMBER 15. ZONE 84. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.8	26.2	28.4	30.6	32.8	35.0	c	32 30.60	55 22 10.0 10.2	III 44.420	1 32 33.92	−16 30 29.42	−16 278
2	9.1	8.0	10.0	12.2	14.4	16.6	c	47 12.24	53 26 10.0 8.0	III 44.090	1 47 15.50	−14 34 20.20	−14 346

Reduction Elements. Zone 84.

	OBSERVED.			ADOPTED.		
1894.	c	b	a	c	b	a
	s	s	s	s	s	s
December 15.3....	+0.358	+0.048	+0.056	+0.352	+0.072	+0.056
15.4....	+0.347	+0.096				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		θ Ceti		50 Ceti		ε Sculptoris		υ Ceti		π Ceti	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	47 34 10.15		54 46 9.25		64 24 9.60		60 26 8.90		53 8 8.75	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	43.900	5 12.02	45.350	5 39.73	44.670	5 26.83		4 17.25	45.330	5 39.23
II	Red. to Mer......	.870	1.71	.290	1.65	.610	1.55	41.050	1.61	.270	1.67
VI	Inclination......	.655		.100		.425		40.850	0.88	.065	
VII	Refraction.......	.600	1 4.1	.065	1 23.0	.405	2 2.1	.800	1 43.2	.035	1 18.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
θ Ceti..............	1 18 57.52	11	+ 0.45	−10.92	47 40 28.0	57.5
α Ursae Minoris.....	1 20 26.18	6	+16.35	[−10.96]	310 12	....
50 Ceti..............	1 31 2.92	11	+ 0.46	−10.93	54 53 13.6	57.4
ε Sculptoris........	1 40 55.15	11	+ 0.48	−11.07	64 31 40.1	57.3
υ Ceti..............	1 55 14.85	11	+ 0.47	−10.95	60 32 11.8	57.7
π Ceti..............	2 39 19.04	11	+ 0.45	−10.99	53 15 8.0	57.7

h		s
1.818...........	dt	−10.972
	Hourly rate	0.0000
		° ′ ″
	Adopted Equator Point............	38 56 57.52

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
1 20	29.895	47.7	46.0
2 29	29.895	46.2	44.5

Note.
π Ceti. Clouds after this.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	A = α to 1900.0				D = Z. D. S. to 1894.0				R		
			53°	54°	55°	56°	53°	54°	55°	56°	53° 30′	54° 30′	55° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
53	+0.454	1 30	+14.009	+13.948	+13.886	+13.825	+17.76	+17.45	+17.14	+16.83	78.92	81.85	84.94
54	0.456	2 0	13.663	13.587	13.512	13.434	17.96	17.67	17.39	17.12	79.03	81.96	85.06
55	0.457	2 30	+13.350	+13.259	+13.170	+13.078	+17.88	+17.62	+17.37	+17.11	.....	.....	.....
56	+0.459												

1894 DECEMBER 17. ZONE 85. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.1	2.6	4.5	6.7	8.9	11.0	c	25 6.74	53 16 10.0 6.2	III	46.140	2 25 9.61	−14 25 7.32	−14 468
2	9.4	6.8	8.9	11.1	13.3	15.4	c	34 11.10	52 54 10.0 7.5	III	45.820	2 34 13.91	14 3 3.70	14 496
3	5.5	14.8	16.9	19.0	21.2	23.4	c	39 19.06	53 12 10.0 6.7	III B	42.870	2 39 21.80	14 16 55.37	14 519
4	9.1	35.3	37.3	39.5	41.7	43.9	c	40 39.54	53 12 “ “	III A	47.050	2 40 42.25	14 24 44.26	14 524
5	8.7	43.3	45.4	47.5	49.7	51.8	c	41 47.54	53 12 “ “	III A	43.530	2 41 50.24	14 23 37.11	14 527
6	9.4	8.0	9.9	12.0	14.3	16.6	c	42 12.16	53 12 “ “	VI A	41.200	2 42 14.86	14 22 55.02	14 529
7	9.1	36.5	38.3	40.3	42.1	44.4	a	46 10.05	54 42 10.0 7.4	I B	45.010	2 46 12.58	15 47 41.25	15 505
8	9.1	11.5	13.7	15.9	18.0	20.3	c	46 15.88	54 42 “ “	III A	47.130	2 46 18.39	15 54 52.20	16 513
9	9.5	42.3	44.3	46.4	48.6	50.7	c	46 46.46	54 42 “ “	V	45.880	2 46 48.97	15 51 15.68	16 517
10	9.3	9.4	11.5	13.6	15.7	17.9	c	1 13.62	53 52 10.0 5.1	III	47.425	3 1 16.08	−15 1 45.12	−15 539
11	8.5	55.1	57.2	59.3	1.5	3.7	c	5 59.36	54 40 10.0 6.8	III	44.530	3 6 1.68	−15 48 54.43	−15 551
12	9.1	34.8	36.8	38.9	41.0	43.3	c	12 38.96	52 56 10.0 6.5	III	42.080	3 12 41.41	14 4 4.87	14 638
13	8.1	7.5	9.3	11.3	13.2	15.5	a	19 40.89	53 12 10.0 6.0	I	44.340	3 19 43.25	14 20 49.44	14 661
14	9.0	52.5	54.6	56.7	58.9	1.1	c	19 56.76	53 52 10.0 5.6	III	43.165	3 19 59.05	15 0 30.56	15 594
15	9.5	20.6	22.3	24.2	26.2	28.4	a	21 54.16	55 14 10.0 6.1	I	42.170	3 21 56.28	16 22 14.50	16 636
16	9.4	51.7	53.7	55.9	58.2	0.3	c	21 55.96	55 26 10.0 6.8	V	41.360	3 21 58.06	16 34 3.62	16 638
17	9.4	.....	.....	.....	.....	.....	.....	....	52 50 10.0 6.7	III	45.390	3 28 20	13 59 14.20	14 691
18	8.7	.....	.....	.....	.....	.....	.....	....	55 26 10.0 6.3	III	41.580	3 30 7	16 34 9.04	16 662
19	8.9	42.5	44.3	46.2	48.2	.....	a	35 16.20	55 32 10.0 7.0	I	42.640	3 35 18.18	16 40 30.13	16 680
20	9.1	.....	.....	.....	.....	.....	.....	....	55 32 “ “	III B	44.220	3 35 25	−16 37 48.61	−16 681
21	9.3	.....	.....	.....	.....	.....	.....	....	55 32 “ “	VII B	43.440	3 36 25	−16 37 37.35	−16 686
22	9.0	.....	.....	.....	.....	.....	.....	....	55 32 “ “	I B	45.250	3 36 51	16 38 7.00	16 687
23	8.6	44.3	46.5	48.6	50.8	53.1	c	42 48.66	54 12 10.0 6.5	III	43.680	3 42 50.73	15 20 50.86	15 660
24	8.8	45.8	47.9	50.0	52.2	54.3	c	43 50.04	52 42 10.0 4.7	III	43.170	3 43 52.28	13 50 36.40	13 745
25	9.6	13.5	15.5	17.6	19.9	22.0	c	46 17.70	55 22 10.0 6.9	III B	47.600	3 46 19.62	16 28 57.35	16 711
26	7.9	47.4	49.5	51.7	53.8	56.0	c	48 51.68	54 6 10.0 5.9	III	47.240	3 48 53.72	15 16 1.04	15 683
27	9.1	31.4	33.1	35.1	37.0	39.3	a	50 4.83	54 6 “ “	III B	49.980	3 50 6.87	15 13 39.32	15 686
28	9.0	51.4	53.1	55.1	57.0	59.3	a	52 24.65	52 42 10.0 5.5	III A	47.480	3 52 26.83	13 55 17.47	14 786
29	9.4	21.1	23.2	25.3	27.5	29.7	(c)	52 25.36	52 42 “ “	VI	49.620	3 52 27.54	13 52 46.68	14 787
30	.....	45.1	47.3	49.1	50.9	53.0	e	53 19.53	52 42 “ “	VII B	43.355	3 53 21.71	−13 47 33.78	−13 781
31	9.4	16.5	18.5	20.5	22.9	24.8	c	57 20.64	55 10 10.0 5.4	III	47.890	3 57 22.50	−16 20 19.97	−16 760
32	9.1	55.6	57.7	59.8	2.0	4.1	c	1 59.84	53 30 10.0 5.4	III	48.150	4 2 1.87	14 40 22.03	14 820
33	8.0	45.1	47.0	48.9	50.8	53.1	a	6 18.55	53 30 “ “	I B	48.820	4 6 20.56	14 37 20.96	14 832
34	9.0	23.5	25.4	27.2	29.1	31.4	a	6 56.89	53 30 “ “	I	48.210	4 6 58.89	14 40 23.34	14 834
35	9.0	50.6	52.7	54.9	57.1	59.2	c	6 54.90	53 40 10.0 5.5	V	42.190	4 6 56.88	14 48 32.03	14 833
36	8.8	22.9	24.9	27.2	29.2	31.4	c	8 27.12	53 26 10.0 3.9	III	42.860	4 8 29.12	14 34 42.31	14 840
37	9.2	38.3	40.2	42.5	44.6	46.8	c	9 42.48	53 44 10.0 4.8	V	46.360	4 9 44.43	14 53 53.08	15 746
38	8.8	9.3	11.0	13.0	14.9	17.0	a	11 42.54	53 2 10.0 5.1	I	43.040	4 11 44.56	14 10 44.71	14 854
39	9.4	5.0	7.3	9.4	11.5	13.6	c	15 9.36	55 16 10.0 5.6	V	48.010	4 15 11.08	16 26 32.07	16 834
40	8.6	42.5	44.6	46.6	48.8	51.0	c	15 46.70	55 16 “ “	V B	44.070	4 15 48.43	−16 22 2.89	−16 839
41	9.7	54.1	55.9	57.9	59.8	2.2	a	18 27.61	53 52 10.0 5.5	I	45.760	4 18 29.50	−15 1 42.37	−15 772
42	9.4	26.4	28.4	30.5	32.7	34.9	c	18 30.58	53 52 “ “	V B	45.770	4 18 32.47	14 58 32.46	15 773
43	8.1	41.3	43.3	45.1	47.1	49.4	a	21 14.98	54 44 10.0 5.5	I	44.075	4 21 16.74	15 53 13.80	15 786
44	9.1	30.8	32.7	34.5	36.6	38.8	a	22 4.41	54 36 10.0 4.7	I	48.430	4 22 6.18	15 46 36.94	15 787
45	9.4	16.0	18.1	20.3	22.5	24.7	c	22 20.32	54 36 “ “	III B	42.980	4 22 22.10	15 41 40.60	15 788
46	8.9	32.1	34.0	35.8	37.8	40.1	a	26 5.79	55 20 10.0 5.4	I	44.260	4 26 7.45	16 29 21.30	16 877
47	9.3	16.2	18.4	20.7	22.8	24.9	c	26 20.60	55 0 10.0 5.6	III	42.535	4 26 22.30	16 8 49.33	16 880
48	8.9	20.3	22.0	24.1	26.0	28.3	a	32 53.98	55 24 10.0 5.6	I	45.480	4 32 55.60	16 33 48.03	16 905
49	.....	0.9	2.6	4.6	6.4	8.6	a	33 34.17	53 22 10.0 5.6	I B	50.010	4 33 36.05	14 29 55.42	14 933
50	6.2	8.3	10.2	12.1	14.1	16.4	a	34 41.78	53 22 “ “	I	50.020	4 34 43.65	−14 33 9.91	−14 936
51	9.3	55.9	58.0	0.1	2.5	4.6	c	35 0.22	54 32 10.0 5.1	III	48.310	4 35 1.94	−15 42 42.32	−15 832
52	9.3	26.8	29.0	30.9	32.8	34.7	e	35 1.00	54 44 10.0 5.6	VII	46.580	4 35 2.70	15 54 13.29	15 833
53	8.9	16.5	18.4	20.2	22.3	24.5	a	37 50.09	54 32 10.0 5.6	III	44.400	4 37 51.80	15 41 28.80	15 843
54	9.5	41.0	43.2	45.3	47.6	51.9	c_2 d_1	38 43.22	54 58 10.0 5.6	VI	(45).850	4 38 44.87	16 8 0.89	16 929
55	9.5	15.1	17.4	19.3	21.3	23.2	e	38 49.39	54 58 “ “	VII B	51.115	4 38 51.04	16 6 28.92	16 930
56	9.0	39.6	41.5	43.5	45.5	47.6	a	41 13.11	53 30 10.0 5.7	III	42.710	4 41 14.94	14 38 54.88	14 958
57	9.2	14.5	16.7	18.7	21.0	23.2	c	43 18.82	55 0 10.0 5.2	III	43.650	4 43 20.46	16 9 18.10	16 952
58	8.8	31.8	33.6	35.6	37.6	40.0	a	45 5.48	54 48 10.0 5.4	I	48.380	4 45 7.13	15 58 47.19	16 960
59	7.5	29.6	31.8	33.9	36.1	38.3	c	45 33.94	54 48 “ “	III	47.390	4 45 35.59	15 58 30.35	16 963
60	9.6	40.0	42.1	43.9	45.8	48.0	a	47 13.79	55 24 10.0 5.7	I B	40.980	4 47 15.36	−16 29 14.33	−16 973
61	9.3	9.9	12.1	14.3	16.5	18.7	c	47 14.30	55 24 “ “	V	45.120	4 47 15.86	−16 33 51.35	−16 975
62	9.0	0.9	2.6	4.6	6.6	8.8	a	49 34.25	53 20 10.0 4.9	I	47.020	4 49 36.07	14 30 18.57	14 990
63	8.6	9.7	11.7	13.7	15.6	17.6	e	50 43.96	53 44 10.0 5.8	VII	45.050	4 50 45.73	14 53 48.17	14 994
64	8.9	19.2	20.9	23.0	25.1	27.3	a	52 52.92	55 12 10.0 6.3	I	44.220	4 52 54.49	16 21 32.59	16 1001
65	8.0	2.6	4.7	6.9	9.0	11.2	c	53 6.88	52 42 10.0 6.5	V	44.440	4 53 8.77	−13 51 33.36	−13 1032

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
66	8.9	12.4	14.2	16.2	18.1	20.3	a	54 45.99	54	44	10.0	5.2	I	46.230	4 54 47.62	−15 54 10.01	−15 914
67	9.0	55.4	57.0	59.0	1.1	3.2	a	55 28.89	54	44	“	“	I A	44.540	4 55 30.51	15 56 52.45	16 1018
68	9.1	26.2	28.2	30.0	31.9	34.1	a	55 59.82	54	44	“	“	I	44.520	4 56 1.44	15 53 37.76	15 921
69	8.7	52.2	54.5	56.5	0.9	2.3	c_3 d_2	55 52.24	55	4	10.0	6.3	V	47.310	4 55 53.82	16 14 36.57	16 1024
70	8.9	32.2	34.1	36.4	38.5	40.6	c	57 36.36	53	2	10.0	4.5	III	43.950	4 57 38.20	−14 11 24.17	−14 1019
71	9.0	46.2	48.3	50.5	52.6	54.7	c	2 50.46	53	32	10.0	5.1	V	42.990	5 2 52.22	−14 41 11.64	−14 1050
72	8.7	19.0	20.8	22.8	24.8	27.0	a	4 52.61	54	38	10.0	5.0	I	43.630	5 4 54.22	15 47 24.38	15 953
73	9.4	11.5	13.3	15.4	17.3	19.5	a	5 45.12	54	38	“	“	I B	47.810	5 5 46.73	15 45 31.16	15 960
74	9.1	56.6	58.7	0.9	3.0	5.3	c	6 0.90	54	38	“	“	III A	41.690	5 6 2.50	15 50 4.06	15 962
75	9.1	41.9	44.0	46.3	48.3	50.6	c	6 46.22	54	38	“	“	V A	45.070	5 6 47.82	15 51 11.01	15 963
76	9.0	41.7	43.7	45.7	47.9	50.0	c	7 45.80	54	38	“	“	III B	44.830	5 7 47.41	15 44 36.86	15 969
77	9.3	11.0	12.9	14.8	16.8	18.9	a	8 44.61	54	38	“	“	III A	40.965	5 8 46.21	15 49 51.42	15 974
78	8.9	57.1	59.3	1.5	5.9	7.4	c_3 d_2	8 57.23	53	36	10.0	4.9	V	41.645	5 8 58.97	14 44 48.71	14 1073
79	8.9	19.4	20.9	25.2	27.3	29.7	b_2 c_3	11 29.56	55	18	10.0	5.1	III	44.590	5 11 31.07	16 27 49.92	16 1089
80	9.0	6.6	8.9	10.7	12.6	14.6	e	11 40.90	54	18	10.0	6.2	V	42.390	5 11 42.54	−15 27 6.99	−15 989
81	8.8	56.9	58.9	1.2	3.3	5.4	c	13 1.14	54	34	10.0	5.6	V	45.550	5 13 2.74	−15 44 8.78	−15 999
82	9.1	19.0	20.9	22.9	24.9	26.9	a	15 52.70	54	56	10.0	4.9	I A	49.710	5 15 54.23	16 10 41.57	16 1107
83	9.4	56.0	57.9	59.9	1.8	4.2	a	16 29.73	54	56	“	“	III B	46.440	5 16 31.27	16 3 12.67	16 1111
84	9.0	10.0	11.6	13.8	15.6	17.8	a	17 43.53	54	56	“	“	I	47.070	5 17 45.06	16 6 37.23	16 1117
85	9.5	3.6	5.9	7.8	10.1	12.1	c	18 7.90	54	56	“	“	III B	39.170	5 18 9.45	16 0 53.89	16 1118
86	9.4	1.3	3.3	5.3	7.3	9.4	a	19 35.10	54	56	“	“	I A	44.280	5 19 36.62	16 8 59.08	16 1127
87	8.6	35.0	39.2	41.3	43.5	45.8	b_3 c_4	19 43.54	54	56	“	“	III A	41.290	5 19 45.07	16 8 3.63	16 1129
88	9.0	28.3	30.3	32.2	34.2	36.3	a	21 1.81	53	26	10.0	5.3	III B	41.650	5 21 3.55	14 31 38.52	14 1128
89	8.8	8.0	9.5	13.8	15.8	18.0	b_2 c_3	21 18.03	53	26	“	“	III A	41.740	5 21 19.75	14 38 8.68	14 1131
90	7.9	58.5	0.5	2.6	4.9	7.1	c	22 2.72	52	46	10.0	5.7	V	47.470	5 22 4.53	−13 56 44.55	−13 1152
91	8.9	44.8	46.9	51.2	52.8	55.6	c_4 d_3	22 42.69	53	40	10.0	5.7	VI B	43.740	5 22 44.39	−14 46 22.86	−14 1136
92	9.0	27.8	29.8	32.0	34.2	36.3	c	24 32.02	53	4	10.0	5.6	V	44.565	5 24 33.79	14 13 50.74	14 1146
93	9.0	34.1	35.8	37.6	39.7	41.9	a	26 7.31	52	56	10.0	6.5	I	45.470	5 26 9.10	14 6 5.23	14 1156
94	8.7	11.3	13.5	15.6	17.8	20.0	c	26 15.64	52	40	10.0	6.4	V	40.800	5 26 17.46	13 48 38.56	13 1171
95	9.2	56.2	58.2	0.1	1.9	4.3	a	27 29.60	52	40	“	“	III	45.780	5 27 31.42	13 50 12.96	13 1176
96	9.0	46.6	48.9	50.8	52.6	54.6	e	29 21.00	53	40	10.0	5.8	VII(A)	42.190	5 29 22.68	14 52 25.23	14 1170
97	9.1	38.8	40.8	43.0	45.1	47.3	c	30 43.00	53	40	“	“	III B	41.660	5 30 44.70	14 45 44.16	14 1177
98	8.9	29.1	31.2	33.3	35.5	37.7	c	31 33.36	52	42	10.0	7.2	V	48.460	5 31 35.17	13 53 8.51	13 1192
99	9.0	16.8	18.7	20.6	22.5	24.7	a	32 50.26	53	44	10.0	5.2	III	45.720	5 32 51.94	14 54 16.78	14 1187
100	8.9	7.9	9.6	11.6	13.5	15.6	a	33 41.17	53	14	10.0	5.5	III	44.735	5 33 42.91	−14 23 56.96	−14 1191
101	9.0	44.1	45.9	48.0	49.8	52.0	a	35 17.43	52	44	10.0	5.3	I	48.530	5 35 19.23	−13 55 7.07	−13 1209
102	9.0	13.4	15.3	17.2	19.2	21.3	a	36 46.82	53	16	10.0	5.9	I	44.290	5 36 48.56	14 25 48.20	14 1208
103	9.0	3.4	5.0	9.2	11.3	13.4	b_2 c_3	37 13.46	52	56	10.0	7.0	III	43.170	5 37 15.24	14 5 28.43	14 1210
104	9.2	47.9	49.8	51.8	53.7	56.0	a	38 21.42	53	36	10.0	6.2	III	45.240	5 38 23.11	14 46 10.25	14 1216
105	9.2	24.8	27.0	29.2	31.5	33.6	c	38 29.22	53	36	“	“	V B	49.080	5 38 30.92	14 44 11.94	14 1217
106	9.3	43.7	45.8	48.1	50.2	52.4	c	39 48.04	54	40	10.0	5.5	V	44.195	5 39 49.59	15 49 55.49	15 1143
107	8.0	0.3	2.4	4.6	6.8	9.0	c	44 4.62	53	10	10.0	5.4	III	47.290	5 44 6.37	14 20 50.56	14 1243
108	7.5	57.7	59.9	2.1	4.3	6.5	c	45 2.10	53	20	10.0	4.6	III	47.055	5 45 3.82	14 30 46.59	14 1251
109	9.4	3.5	5.6	7.8	9.9	12.2	c	46 7.80	53	2	10.0	5.2	III	47.180	5 46 9.56	14 12 48.91	14 1257
110	9.3	52.7	54.8	56.9	59.1	1.3	c	47 56.96	54	42	10.0	6.4	III	44.735	5 47 58.51	−15 52 8.45	−15 1198
111	7.9	18.9	21.1	23.0	25.4	27.5	c	49 23.18	52	54	10.0	4.7	III A	49.740	5 49 24.95	−14 8 53.38	−14 1272
112	9.0	30.0	32.1	34.3	36.5	38.6	c	50 34.30	52	54	“	“	III B	42.000	5 50 36.09	13 59 57.10	14 1277
113	5.	45.0	47.1	49.2	51.3	53.5	c	51 49.22	53	2	10.0	4.6	III	41.890	5 51 50.99	14 11 9.72	14 1286
114	8.7	38.2	40.0	41.9	43.8	46.0	a	53 11.49	53	2	“	“	I A	38.280	5 53 13.25	14 13 13.68	14 1292
115	8.7	10.7	12.7	14.8	17.0	19.0	c	54 14.84	53	2	“	“	III A	37.090	5 54 16.61	14 12 53.18	14 1297
116	8.7	4.2	6.2	8.4	10.6	12.7	c	55 8.42	53	34	10.0	5.9	III	40.820	5 55 10.12	14 42 52.95	14 1300
117	7.3	54.8	57.0	59.0	1.3	3.4	c	57 59.10	53	20	10.0	5.6	III	43.670	5 58 0.83	14 29 48.13	14 1315
118	8.6	15.8	17.8	19.9	22.2	24.3	c	59 20.00	52	46	10.0	6.0	III	47.340	5 59 21.81	13 56 57.71	13 1339
119	8.9	30.2	32.3	34.5	36.7	38.8	c	0 34.50	53	8	10.0	6.6	III	44.690	6 0 36.26	14 18 8.81	14 1328
120	6.0	31.7	33.8	36.0	38.2	40.2	c	1 35.98	53	44	10.0	5.1	III	49.095	6 1 37.66	−14 55 34.85	−14 1331
121	8.8	14.6	16.7	18.7	20.9	23.1	c	3 18.80	53	4	10.0	5.4	III	47.020	6 3 20.57	−14 14 54.01	−14 1341
122	9.2	57.7	59.4	1.4	3.3	5.6	a	4 31.07	53	38	10.0	5.7	III	47.050	6 4 32.77	−14 48 56.97	−14 1346

Reduction Elements. Zone 85.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
December 17.3....	+0.261	+0.061	−0.012	+0.270	+0.064	+0.050
17.5....	+0.280	+0.066	+0.112			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ρ Ceti		σ Ceti		η Eridani		τ^4 Eridani		ε Leporis		α Leporis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	51 36 8.55		54 32 8.70		48 8 8.30		60 58 8.05		61 20 8.20		56 44 8.70	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.		5 23.62	45.610	5 44.62	48.350	6 39.96	44.510	5 24.56	45.200	5 36.69		5 1.21
II	Red. to Mer.	44.490	1.69	.590	1.65	.335	1.71	.440	1.58	.180	1.58	43.360	1.65
VI	Inclination	.320	0.88	.320			−2.20	.365		44.910		.105	0.88
VII	Refraction	.270	1 16.0	.300	1 24.5		1 7.3	.325	1 48.5	.880	1 50.4	.110	1 32.1

		ζ Leporis		5 Monocerotis	
		° ′ ″		° ′ ″	
	CIRCLE READING.	53 42 7.70		45 4 8.20	
		r	′ ″	r	′ ″
I	Microm. Eq.	43.290	5 0.64		6 15.54
II	Red. to Mer.	.250	1.66	47.160	1.75
VI	Inclination	.080		.030	0.88
VII	Refraction	.030	1 22.3	.015	1 0.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ρ Ceti	2 21 4.08	11	+0.36	−10.89	51 42 50.7	61.3
σ Ceti	2 27 18.15	11	+0.36	−10.90	54 39 19.5	60.2
η Eridani	2 51 29.37	11	+0.36	−10.90	48 15 55.1	60 6
47 H. Cephei	2 52 19.90	6	+1.50	[−10.61]	319 56	....
τ^4 Eridani	3 15 2.45	11	+0.37	−10.80	61 5 22.7	60.0
ε Leporis	5 1 13.01	10	+0.37	−10.97	61 27 36.9	59.5
α Leporis	5 28 17.85	11	+0.36	−10.89	56 50 44.5	61.3
ζ Leporis	5 42 23.75	11	+0.36	−10.91	53 48 32.3	60.6
δ Ursae Minoris S. P.	6 6 1.94	5	−4.51	[−10.10]	305 34	....
5 Monocerotis	6 9 55.84	11	+0.35	−10.82	45 11 27.1	62.0

h			s
2.730	*dt*		−10.872
		Hourly rate	− 0.0091

Adopted Equator Point .... 38° 57′ 0″.69

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
2 20	30.055	37.5	35.5
3 15	30.055	36.1	34.6
4 13	30.065	35.6	34.1
5 10	30.065	34.5	33.7
6 10	30.065	34.2	33.1

Note.

ρ Ceti. Slightly hazy.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					$D =$ Z. D. S. to 1894.0				
			52°	53°	54°	55°	56°	52°	53°	54°	55°	56°
°	s	h m	s	s	s	s	s	″	″	″	″	″
52	+0.357	2 0	......	+13.676	+13.602	......	......	.....	+17.76	+17.47	.....	.....
53	0.359	2 30	......	13.359	13.271	+13.180	......	.....	17.65	17.39	+17.12	.....
54	0.361	3 0	+13.176	13.076	12.975	12.873	+12.769	+17.48	17.26	17.02	16.79	+16.56
55	0.362	3 30	12.943	12.832	12.722	12.609	12.496	16.78	16.58	16.38	16.19	16.00
56	+0.362	4 0	12.752	12.635	12.514	12.392	12.271	15.77	15.60	15.45	15.30	15.14
		4 30	12.607	12.482	12.357	12.230	12.100	14.51	14.39	14.27	14.16	14.05
		5 0	12.510	12.380	12.250	12.120	11.986	13.01	12.94	12.86	12.79	12.72
		5 30	12.461	12.329	12.199	12.066	+11.931	11.30	11.27	11.25	11.21	+11.19
		6 0	+12.463	12.334	12.203	+12.070	......	+ 9.40	9.42	9.43	+ 9.45	.....
		6 30	......	+12.389	+12.261	......	......	.....	+ 7.42	+ 7.48	.....	.....

APPARENT RIGHT ASCENSION.	R				
	52° 30′	53°	54°	55°	56°
h m	″	″	″	″	″
2 0	78.13	79.54	82.49	85.57	88.82
2 30	78.22	79.63	82.58	85.66	88.92
3 0	78.31	79.73	82.68	85.76	89.02
3 30	78.38	79.80	82.76	85.84	89.10
4 0	78.43	79.85	82.81	85.90	89.17
4 30	78.47	79.89	82.85	85.94	89.21
5 0	78.49	79.91	82.87	85.96	89.23
5 30	78.54	79.96	82.93	86.02	89.29
6 0	78.60	80.02	82.98	86.08	89.35

1894 DECEMBER 19. ZONE 86°. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°	
1	9.0	57.2	59.1	1.1	3.0	5.3	a	26 31.05	55 48	10.0	8.2	I	45.140	3 26 33.03	−16 57 19.76	−17	684
2	9.1	47.5	49.4	53.5	55.7	57.7	$b_2\ c_3$	26 57.84	56 22	10.0	9.4	III	43.310	3 26 59.75	17 30 49.14	17	686
3	9.3	44.7	46.4	48.3	50.2	52.3	a	28 17.86	52 50	10.0	8.8	I	45.270	3 28 20.15	13 59 14.82	14	691
4	8.9	13.8	15.8	18.1	22.4	24.1	$c_3\ d_2$	28 13.77	56 4	10.0	9.5	VI B	38.480	3 28 15.71	17 8 4.78	17	689
5	8.8	55.4	57.6	59.7	4.2	5.8	$c_3\ d_2$	28 55.47	56 4	“	“	VI A	46.045	3 28 57.39	17 16 58.48	17	692
6	8.6	54.4	55.9	0.2	2.4	4.6	$b_2\ c_3$	30 4.56	55 26	10.0	8.2	III	41.440	3 30 6.55	16 34 11.00	16	662
7	9.2	7.1	8.5	12.6	14.9	17.2	$b_2\ c_3$	31 17.14	56 20	10.0	8.8	III A	45.725	3 31 19.01	17 32 51.28	17	696
8	8.4	28.3	30.4	32.6	34.8	37.1	c	31 32.64	56 20	“	“	V B	40.595	3 31 34.52	17 24 46.34	17	697
9	9.1	25.7	27.8	32.1	33.7	36.4	$c_4\ d_3$	33 23.45	56 50	10.0	9.2	VI	44.460	3 33 25.25	17 59 17.71	18	642
10	7.9	27.9	29.7	31.6	33.8	36.1	a	35 1.85	56 32	10.0	9.6	I	44.910	3 35 3.67	−17 41 21.70	−17	707
11	9.0	12.8	14.5	18.7	20.8	23.1	$b_2\ c_3$	35 23.04	55 28	10.0	8.0	III	46.480	3 35 24.98	−16 37 49.83	−16	681
12	9.1	49.7	51.4	53.4	55.4	57.5	a	36 23.34	55 28	“	“	III	45.870	3 36 25.27	16 37 38.53	16	686
13	8.8	15.4	17.1	19.2	21.1	23.3	a	36 49.08	55 28	“	“	III	47.390	3 36 51.01	16 38 7.87	16	687
14	9.0	17.1	19.2	23.4	25.1	27.7	$c_4\ d_3$	37 14.84	56 18	10.0	9.1	VI B	38.960	3 37 16.68	17 22 18.11	17	713
15	8.1	54.8	57.1	58.9	0.8	2.7	e	37 28.77	56 18	“	“	VII A	36.220	3 37 30.59	17 27 54.58	17	715
16	9.0	11.8	13.9	16.1	18.3	20.4	c	39 16.10	55 36	10.0	8.0	V	45.690	3 39 17.99	16 45 38.39	16	692
17	8.8	1.4	3.3	5.4	7.4	9.5	a	40 35.27	55 36	“	“	I B	49.160	3 40 37.16	16 43 27.98	16	696
18	9.3	36.7	38.8	41.1	43.1	45.4	c	40 41.02	55 36	“	“	III A	43.530	3 40 42.90	16 48 10.22	16	697
19	8.6	21.7	23.7	25.8	30.3	31.8	$c_3\ d_2$	41 21.60	55 54	10.0	9.0	V	46.060	3 41 23.44	17 3 47.77	17	724
20	9.3	7.5	9.6	11.6	16.1	17.7	$c_3\ d_2$	42 7.42	56 40	10.0	9.4	V	45.170	3 42 9.17	−17 49 33.62	−17	727
21	8.0	52.6	54.8	57.1	59.2	1.3	c	42 57.00	56 40	“	“	V	46.295	3 42 58.74	−17 49 55.54	−17	730
22	9.2	33.7	35.8	37.8	42.2	43.8	$c_3\ d_2$	43 33.60	55 52	10.0	8.0	V B	48.490	3 43 35.43	16 59 20.85	17	732
23	9.4	50.4	52.4	54.5	56.8	58.9	c	44 54.60	55 52	“	“	III (B)	39.975	3 44 56.43	16 56 36.22	17	735
24	8.0	24.7	26.3	30.5	32.6	34.8	$b_2\ c_3$	45 34.85	55 52	“	“	III A	45.135	3 45 36.66	17 4 43.84	17	738
25	8.2	2.7	5.1	7.1	8.9	11.1	e	45 36.99	55 52	“	“	VII B	39.165	3 45 38.81	16 56 24.26	17	739
26	8.6	21.1	23.6	25.4	27.3	29.3	e	45 55 34	55 52	“	“	VII	38.620	3 45 57.15	16 59 27.78	17	742
27	9.4	46.4	48.1	53.2	54.4	56.7	$b_2\ c_3$	47 56.63	56 4	10.0	9.3	III	43.200	3 47 58.40	17 12 54.46	17	747
28	9.0	32.7	34.5	36.6	38.4	40.7	a	50 6.45	55 34	10.0	9.1	I	46.660	3 50 8.26	16 43 58.16	16	727
29	9.3	36.1	38.2	40.4	42.5	44.6	c	50 40.36	55 34	“	“	III	41.890	3 50 42.17	16 42 28.81	16	729
30	9.0	56.9	58.9	1.1	3.2	5.5	c	51 1.12	55 34	“	“	V A	46.040	3 51 2.92	−16 47 4.78	−16	733
31	9.1	6.9	8.7	10.6	12.7	14.9	a	53 40.78	56 26	10.0	10.4	I A	48.160	3 53 42.46	−17 39 46.33	−17	765
32	9.4	50.9	52.9	54.8	56.7	59.1	a	54 24.88	56 26	“	“	I B	40.700	3 54 26.57	17 30 55.06	17	766
33	8.4	54.9	56.8	58.7	0.7	3.0	a	56 28.84	56 30	10.0	8.9	I	42.630	3 56 30.50	17 38 46.30	17	776
34	7.9	0.1	1.9	3.9	5.8	8.1	a	59 33.86	55 42	10.0	8.0	I	45.570	3 59 35.59	16 51 41.06	16	770
35	9.5	40.9	42.6	44.6	46.6	48.7	a	0 14.61	55 58	10.0	8.6	I	43.960	4 0 16.31	17 7 11.58	17	788
36	9.2	13.4	15.3	17.2	19.2	21.4	a	0 47.29	56 20	10.0	8.1	III	43.570	4 0 48.94	17 29 7.17	17	790
37	9.1	10.8	12.6	14.5	16.5	18.8	a	2 44.56	55 52	10.0	8.4	I A	46.590	4 2 46.24	17 5 17.23	17	793
38	9.2	7.7	9.6	11.6	13.5	15.8	a	3 41.55	55 52	“	“	I B	41.040	4 3 43.24	16 57 2.76	17	797
39	9.5	59.2	1.1	3.0	5.2	7.3	a	4 33.08	55 52	“	“	I A	40.330	4 4 34.77	17 3 17.88	17	803
40	9.1	55.8	57.7	1.8	4.0	6.1	$b_2\ c_3$	5 6.15	56 0	10.0	8.2	III	43.020	4 5 7.82	−17 8 57.46	−17	807
41	8.8	51.3	53.1	55.1	57.1	59.3	a	6 25.00	55 18	10.0	8.3	I	44.140	4 6 26.75	−16 27 15.45	−16	806
42	9.2	36.2	37.7	41.9	43.9	46.2	$b_2\ c_3$	6 46.25	55 56	10.0	9.0	III	47.970	4 6 47.91	17 6 33.40	17	814
43	9.0	36.6	38.5	40.3	42.4	44.5	a	8 10.36	55 50	10.0	8.8	I B	40.550	4 8 12.04	16 54 55.38	17	821
44	9.3	16.6	18.5	20.7	22.8	25.0	c	8 20.72	55 50	“	“	III A	39.830	4 8 22.39	17 1 11.89	17	822
45	9.0	40.1	42.4	44.4	46.7	48.9	c	8 44.50	55 50	“	“	V A	47.290	4 8 46.16	17 3 36.95	17	823
46	9.1	14.5	16.5	18.7	20.7	23.1	c	12 18.70	55 48	10.0	7.6	III B	37.830	4 12 20.36	16 52 6.19	16	827
47	8.8	40.2	42.1	44.1	45.9	48.2	a	13 14.01	55 48	“	“	I A	38.190	4 13 15.65	16 58 39.93	17	839
48	9.3	39.1	40.9	42.9	44.8	47.1	a	15 12.89	55 58	10.0	8.0	I	40.790	4 15 14.50	17 6 16.87	17	852
49	9.1	48.1	50.1	52.1	53.8	56.1	a	15 21.98	55 58	“	“	III (A)	44.150	4 15 23.58	17 10 37.87	17	853
50	7.9	35.2	37.1	39.1	41.1	43.2	a	16 9.07	55 58	“	“	I B	44.150	4 16 10.68	−17 4 7.94	−17	856
51	9.4	53.2	55.1	59.3	1.1	3.7	$c_4\ d_3$	16 50.88	54 36	10.0	8.3	VII B	45.980	4 16 52.66	−15 42 44.59	−15	768
52	8.9	27.1	29.1	33.6	35.1	37.8	$c_4\ d_3$	17 24.94	54 36	“	“	VII A	41.950	4 17 26.71	15 47 55.70	15	771
53	9.5	28.8	30.8	33.1	35.4	37.4	c	18 33.10	54 36	“	“	V B	43.140	4 18 34.87	15 41 49.27	15	774
54	8.0	27.8	29.6	31.6	33.6	35.8	a	21 1.54	55 30	10.0	8.6	I	42.340	4 21 3.18	16 38 48.02	16	853
55	9.4	13.3	15.2	17.2	19.3	21.3	a	21 47.16	55 46	10.0	7.9	III	45.870	4 21 48.76	16 55 58.53	17	877
56	9.0	12.5	14.4	16.3	18.4	20.6	a	25 46.37	55 56	10.0	8.5	I	41.930	4 25 47.93	17 4 43.56	17	892
57	8.6	55.5	57.3	59.3	1.3	3.5	a	26 29.31	55 56	“	“	I	46.770	4 26 30.86	17 6 16.75	17	896
58	8.6	4.9	6.8	8.7	10.6	13.0	a	33 38.70	55 46	10.0	8.6	I	44.220	4 33 40.24	16 55 30.49	17	921
59	9.0	53.1	55.4	57.4	59.6	1.9	c	33 57.48	55 36	10.0	8.7	III B	44.930	4 33 59.05	16 42 31.93	16	909
60	8.8	33.2	35.1	37.1	39.2	41.3	a	35 7.06	55 36	“	“	I	45.280	4 35 8.62	−16 45 51.05	−16	916
61	.....	58.7	0.6	2.5	4.6	6.6	a	35 32.48	55 36	“	“	I	47.280	4 35 34.03	−16 46 29.62	−16	919
62	9.2	4.6	6.5	8.9	11.1	13.3	c	36 8.88	54 40	10.0	8.0	V	41.110	4 36 10.56	15 48 31.97	15	837
63	8.9	31.5	33.9	35.7	37.5	39.6	e	37 5.65	55 44	10.0	10.2	V	41.760	4 37 7.18	16 52 49.25	16	924
64	9.0	16.9	19.4	21.2	23.2	25.2	e	37 51.16	55 56	10.0	9.3	V	44.450	4 37 52.66	17 5 41.39	17	933
65	8.3	15.1	17.2	19.4	21.7	23.8	c	39 19.44	53 28	10.0	7.8	III	46.460	4 39 21.25	14 38 10.71	14	951
66	8.8	48.5	50.4	52.3	54.4	56.6	a	42 22.38	55 58	10.0	7.9	I	45.190	4 42 23.86	17 7 53.32	17	949
67	9.0	15.1	17.8	19.4	23.8	25.8	$b_1\ c_2$	42 28.04	55 58	“	“	II	45.990	4 42 29.52	17 8 9.74	17	950
68	8.9	44.1	46.2	48.4	50.6	52.7	c	42 48.40	55 58	“	“	III	46.825	4 42 49.87	17 8 26.87	17	953
69	6.0	0.9	2.9	5.2	7.5	9.7	c	43 5.24	55 58	“	“	V	42.390	4 43 6.71	17 7 3.63	17	954
70	9.1	22.3	23.9	28.1	30.2	32.4	$b_2\ c_3$	44 32.44	55 32	10.0	9.6	III	43.175	4 44 33.96	−16 41 17.08	−16	959

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
71	9.3	23.3	25.3	27.5	29.7	31.9	c	45 27.54	55 6 10.0	8.8	V	44.810	4 45 29.12	−16 15 48.89	−16 961
72	8.9	31.1	33.3	35.1	37.1	39.1	e	46 5.21	55 20 10.0	8.6	V	41.850	4 46 6.76	16 28 53.00	16 969
73	8.6	12.4	14.5	16.7	19.1	21.1	c	47 16.76	55 48 10.0	8.6	V	44.020	4 47 18.24	16 57 36.65	17 974
74	8.7	3.6	5.7	8.1	10.1	12.3	c	48 7.96	55 56 10.0	8.0	V B	42.810	4 48 9.42	17 2 0.06	17 977
75	8.7	29.5	31.7	33.8	36.1	38.2	c	48 33.86	55 56 “	“	V A	40.940	4 48 35.31	17 7 52.64	17 978
76	6.8	2.8	4.6	6.7	8.6	10.8	a	50 36.60	55 44 10.0	8.5	III	45.520	4 50 38.07	16 54 4.93	16 991
77	9.3	56.1	57.8	59.8	1.9	4.1	a	51 29.93	56 20 10.0	9.9	III	46.390	4 51 31.32	17 30 24.67	17 991
78	9.1	29.5	31.2	33.4	35.4	37.5	a	53 3.18	55 0 10.0	7.7	I	42.960	4 53 4.74	16 9 12.28	16 1003
79	7.5	30.2	31.7	36.2	38.2	40.3	b_2 c_3	53 40.39	55 46 10.0	8.4	III	45.310	4 53 41.85	16 56 2.36	17 1001
80	9.2	50.5	52.7	54.8	59.2	0.8	c_3 d_2	53 50.54	55 46 “	“	VI B	41.060	4 53 52.01	−16 51 29.59	−16 1007
81	9.1	3.1	4.9	6.9	8.9	11.1	a	55 36.88	55 42 10.0	9.9	I	48.150	4 55 38.34	−16 52 56.34	−16 1019
82	9.2	54.3	56.4	58.5	0.8	3.0	c	55 58.60	55 52 10.0	9.4	V B	51.160	4 56 0.04	17 0 44.42	17 1006
83	8.9	17.1	19.0	20.9	22.9	25.2	a	57 50.83	55 8 10.0	9.2	I	47.580	4 57 52.36	16 18 44.30	16 1026
84	9.0	22.9	24.7	26.6	28.5	30.8	a	0 56.55	55 26 10.0	7.6	I	45.730	5 0 58.03	16 36 10.34	16 1037
85	9.2	22.5	24.4	26.4	28.3	30.7	a	1 56.37	55 48 10.0	9.1	I	43.060	5 1 57.80	16 57 21.45	17 1022^2
86	9.2	59.4	1.2	3.2	5.2	7.4	a	3 33.18	55 48 “	“	I B	47.250	5 3 34.62	16 55 28.77	16 1048
87	9.6	19.8	21.5	23.6	25.6	27.7	a	4 53.29	54 6 10.0	8.4	I	42.550	5 4 54.95	15 15 7.45	15 954
88	8.9	0.6	2.4	4.5	6.5	8.7	a	5 34.48	55 58 10.0	8.5	III	47.515	5 5 35.88	17 8 50.84	17 1035
89	9.0	18.8	20.5	22.4	24.5	26.7	a	6 52.52	55 58 “	“	I	51.340	5 6 53.92	17 10 2.89	17 1041
90	9.0	50.7	52.5	54.5	56.5	58.6	a	7 24.32	54 50 10.0	7.7	III	46.480	5 7 25.87	−16 0 28.04	−16 1066
91	8.6	57.6	59.3	1.3	3.3	5.5	a	8 31.16	54 50 “	“	I	41.590	5 8 32.71	−15 58 52.56	−16 1073
92	8.0	13.3	15.0	16.9	19.1	21.1	a	9 46.83	54 50 “	“	I B	43.170	5 9 48.38	15 56 9.64	15 978
93	8.9	47.1	48.9	50.9	52.8	55.1	a	10 20.71	54 50 “	“	III B	38.120	5 10 22.27	15 54 34.92	15 981
94	9.0	39.3	41.4	43.6	45.7	48.0	c	10 43.60	54 50 “	“	V A	35.020	5 10 45.14	16 0 5.59	16 1083
95	9.3	29.8	32.1	33.9	35.8	37.9	e	11 4.06	54 50 “	“	VII	35.350	5 11 5.61	15 56 59.25	16 1086
96	.....	46.1	48.3	50.2	52.0	54.1	e	12 20.09	56 6 10.0	9.6	VI	41.820	5 12 21.46	17 15 8.22	17 1069
97	8.9	4.9	7.4	9.4	11.2	13.3	e	12 39.19	56 6 “	“	VII	44.715	5 12 40.56	17 16 4.68	17 1071
98	9.2	32.1	34.1	36.1	38.4	40.7	c	14 36.28	55 32 10.0	9.4	V A	45.040	5 14 37.71	16 45 22.76	16 1104
99	8.5	22.5	24.7	26.8	28.9	31.1	c	15 26.80	54 46 10.0	8.1	V	47.400	5 15 28.34	15 56 50.96	15 1016
100	9.4	36.4	38.4	40.3	42.2	44.4	a	17 10.14	55 10 10.0	8.2	I B	39.550	5 17 11.63	−16 15 4.84	−16 1114
101	9.3	47.8	49.6	51.6	53.6	55.8	a	18 21.49	55 10 “	“	I	42.800	5 18 22.98	−16 19 21.61	−16 1120
102	9.0	47.7	49.4	51.5	53.7	55.8	a	19 21.43	55 10 “	“	I A	40.830	5 19 22.91	16 21 58.80	16 1126
103	6.5	26.1	27.8	29.8	31.9	34.1	a	19 59.86	55 54 10.0	9.3	I	44.625	5 20 1.24	17 4 0.26	17 1117
104	8.9	26.2	27.9	29.8	31.8	34.1	a	20 59.83	55 30 10.0	9.5	I A	41.420	5 21 1.26	16 42 12.59	16 1137
105	8.8	0.7	2.5	4.5	6.5	8.8	a	21 34.47	55 30 “	“	I (A)	45.095	5 21 35.90	16 43 23.40	16 1141
106	8.6	47.9	49.7	51.6	53.7	55.9	a	22 21.60	55 30 “	“	I B	37.050	5 22 23.05	16 34 20.95	16 1145
107	8.0	6.7	8.7	10.6	12.5	14.9	a	22 40.53	55 30 “	“	IV B	43.000	5 22 41.97	16 36 18.16	16 1147
108	8.7	23.5	25.2	27.2	29.2	31.4	a	23 57.20	55 46 10.0	8.0	I	44.620	5 23 58.59	16 56 0.95	16 1148
109	8.5	20.4	24.1	28.3	30.5	32.7	b_2 c_3	24 32.68	56 16 10.0	8.8	III A	48.150	5 24 33.99	17 30 27.45	17 1147
110	8.2	36.7	38.8	40.8	43.1	45.4	c	24 40.96	56 16 “	“	V B	48.370	5 24 42.29	−17 24 5.15	−17 1148
111	9.1	15.7	17.8	20.1	24.3	25.9	c_3 d_2	25 15.69	56 16 “	“	VII B	35.310	5 25 17.03	−16 19 56.31	−17 1152
112	9.0	50.3	52.2	54.4	56.7	58.9	c	26 54.50	56 16 “	“	III	41.215	5 26 55.82	17 25 0.97	17 1159
113	8.1	59.5	1.5	3.4	5.4	7.7	a	28 33.47	56 10 10.0	9.4	I	43.530	5 28 34.80	17 19 44.17	17 1167
114	9.0	32.9	34.9	37.1	39.3	41.5	c	28 37.14	55 50 10.0	8.9	V	45.980	5 28 38.52	17 0 33.59	17 1168
115	8.7	2.9	4.8	6.6	8.6	10.8	a	31 36.64	55 50 “	“	I B	40.580	5 31 38.03	16 55 33.79	16 1180
116	8.9	51.4	53.3	55.3	57.3	59.5	a	32 25.28	55 50 “	“	I A	48.610	5 32 26.65	17 4 36.68	17 1186
117	8.3	44.5	46.5	48.4	50.3	52.5	a	34 18.37	55 58 10.0	8.2	I	43.090	5 34 19.73	17 7 37.15	17 1197
118	9.0	17.3	19.1	21.0	23.0	25.3	a	35 51.05	55 50 10.0	8.4	I	45.330	5 35 52.42	17 0 20.52	17 1207
119	8.8	9.7	11.3	13.5	15.4	17.5	a	36 43.38	55 50 “	“	I B	40.675	5 36 44.76	16 55 37.75	16 1203
120	7.0	14.2	15.9	17.9	19.9	22.3	a	37 48.04	56 24 10.0	9.2	I	46.400	5 37 49.33	−17 34 44.26	−17 1214
121	8.7	45.7	47.6	49.6	51.7	53.8	a	39 19.50	55 12 10.0	9.0	I	45.880	5 39 20.96	−16 22 30.99	−16 1221
122	8.7	34.1	36.1	37.9	39.8	42.1	a	40 7.88	55 38 10.0	8.4	I B	45.700	5 40 9.28	16 45 15.16	16 1224
123	8.9	8.9	11.0	13.1	15.3	17.4	c	40 13.14	55 38 “	“	III A	46.945	5 40 14.53	16 52 9.37	16 1225
124	9.3	26.4	28.3	30.2	32.2	34.5	a	42 0.20	55 38 “	“	I	43.400	5 42 1.60	16 47 45.72	16 1236
125	8.0	56.1	57.9	59.8	1.8	4.1	a	42 29.81	55 30 10.0	8.5	I	47.250	5 42 31.22	16 40 59.46	16 1242
126	8.6	46.4	48.4	50.6	52.7	54.9	c	42 50.60	54 18	......	......	......	5 42 52.17	15 29 14	15 1167
127	8.9	2.9	4.7	6.8	8.7	11.0	a	46 36.58	54 50 10.0	7.5	I	45.320	5 46 38.08	16 0 21.72	16 1274
128	9.0	36.8	38.8	41.1	43.3	45.4	c	46 41.08	54 50 “	“	III	46.575	5 46 42.58	16 0 47.80	16 1275
129	8.7	41.5	43.6	45.9	48.1	50.2	c	47 45.86	54 50 “	“	V	43.290	5 47 47.37	15 59 47.01	16 1284
130	9.1	42.8	44.4	48.6	50.7	52.9	b_2 c_3	48 52.92	54 50 “	“	III	46.880	5 48 54.42	−16 0 54.67	−16 1290
131	8.0	1.1	3.2	5.3	7.6	9.7	c	49 5.38	54 50 “	“	V	49.340	5 49 6.88	−16 1 43.76	−16 1294
132	9.0	27.8	29.8	32.2	34.3	36.6	c	57 32.14	55 36 10.0	7.3	III	46.280	5 57 33.54	16 46 49.54	16 1337
133	9.2	11.9	13.8	15.7	17.7	19.9	a	59 45.69	55 42 10.0	8.2	I	44.810	5 59 47.08	16 52 21.20	16 1345
134	8.5	46.6	48.3	50.4	52.4	54.6	a	1 20.36	55 42 “	“	I A	49.310	6 1 21.74	16 57 2.86	16 1354
135	9.1	41.2	43.3	45.5	47.7	49.8	c	1 45.50	56 24 10.0	8.4	III	43.835	6 1 46.80	17 34 7.81	17 1352
136	9.0	39.9	41.7	43.8	45.6	47.9	a	3 13.79	56 24 “	“	I	48.640	6 3 15.09	17 35 38.77	17 1362
137	9.1	15.8	17.6	19.5	21.4	23.6	a	4 49.49	55 50 10.0	8.5	I	41.800	6 4 50.88	16 59 26.37	16 1374
138	8.8	37.8	40.4	42.3	44.1	46.0	e	7 12.04	56 14 10.0	9.6	VII	47.120	6 7 13.38	17 25 16.77	17 1393
139	9.0	45.8	47.8	50.2	52.1	54.5	c	8 50.08	55 0 10.0	8.0	V (B)	43.110	6 8 51.60	16 6 40.31	16 1400
140	9.1	18.1	20.4	22.3	24.2	26.0	e	8 52.33	55 0 “	“	VII B	40.270	6 8 53.85	−16 5 47.37	−16 1401
141	9.0	17.1	19.0	21.2	25.4	27.1	c_3 d_2	10 16.92	55 0 “	“	VI	44.250	6 10 18.43	−16 10 17.50	−16 1408
142	8.9	5.2	7.1	9.1	11.1	13.2	a	11 38.93	55 0 “	“	III A	45.500	6 11 40.43	16 13 54.07	16 1414
143	9.4	9.3	11.4	13.7	15.9	18.1	c	12 13.68	55 0 “	“	III B	40.500	6 12 15.20	−16 5 50.05	−16 1417

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
144	9.0	54.8	57.3	59.1	0.9	3.0	e	12 29.16	55 0 10.0 8.0	VII B 34.665	6 12 30.69	−16 4 1.46	−16 1418
145	8.8	36.6	38.7	40.6	42.5	44.6	e	13 10.72	55 0 " "	VII A 41.290	6 13 12.23	16 12 37.16	16 1425
146	8.9	21.7	23.7	25.7	27.7	29.9	a	15 55.69	56 4 10.0 9.0	I 43.190	6 15 57.07	17 13 59.25	17 1450
147	8.9	59.5	1.4	3.3	5.2	7.4	a	16 33.30	56 4 " "	I B 43.310	6 16 34.69	17 10 48	17 1456
148	8.0	26.4	28.5	30.8	35.1	36.7	c_3 d_2	16 26.44	55 46 10.0 7.6	V 43.340	6 16 27.86	16 56 4.40	16 1443
149	8.6	45.9	48.1	50.1	52.3	54.6	c	19 50.20	53 36 10.0 7.1	V 45.960	6 19 51.91	14 46 49.15	14 1430
150	9.0	53.7	55.4	57.5	59.4	1.6	a	21 27.38	55 30 10.0 9.5	I 44.710	6 21 28.84	−16 40 29.37	−16 1479
151	8.8	10.8	12.7	14.5	16.5	18.8	a	22 44.67	56 26 10.0 9.6	I 43.820	6 22 46.01	−17 36 16.03	−17 1498
152	9.1	52.1	54.1	56.0	57.9	0.3	a	23 26.08	56 26 " "	I B 46.940	6 23 27.43	17 34 2.40	17 1502
153	9.7	28.4	30.2	32.1	34.3	36.3	a	26 1.78	53 10 10.0 7.8	I 48.290	6 26 3.56	14 21 32.08	14 1477
154	8.9	26.4	28.2	30.2	32.1	34.2	a	27 0.03	55 10 10.0 8.7	I 41.970	6 27 1.55	16 19 37.81	16 1513
155	9.1	6.9	8.7	10.9	13.2	15.4	c	27 11.02	55 10 " "	III A 44.770	6 27 12.54	16 23 48.11	16 1515
156	8.8	3.1	4.9	6.8	8.8	11.0	a	28 36.40	52 50 10.0 8.9	III 47.360	6 28 38.23	14 1 16.90	13 1542
157	9.0	55.4	57.2	59.2	1.2	3.4	a	34 29.15	55 32 10.0 8.6	I 46.560	6 34 30.65	16 43 10.50	16 1558
158	8.9	25.5	27.6	29.7	31.7	33.8	a	34 59.64	56 16 10.0 9.4	III 46.600	6 35 1.04	17 27 16.30	17 1574
159	8.8	54.7	56.6	58.7	0.7	2.9	a	37 28.83	56 56 10.0 9.1	I A 46.810	6 37 30.14	18 10 36.27	18 1513
160	8.9	23.1	24.9	27.1	29.1	31.2	a	37 57.19	56 56 " "	III A 49.210	6 37 58.50	−18 11 24.47	−18 1517
161	9.0	15.3	17.1	19.2	21.3	23.5	a	38 49.38	56 56 " "	III 45.560	6 38 50.70	−18 7 0.29	−18 1522
162	9.1	11.1	13.2	15.5	17.5	19.6	c	39 15.38	56 56 " "	III B 49.100	6 39 16.71	18 4 54.57	18 1524
163	8.9	13.2	15.4	17.5	19.7	21.9	c	40 17.54	56 56 " "	V B 35.700	6 40 18.88	18 0 39.60	17 1604
164	9.1	50.4	52.7	54.7	56.6	58.5	e	40 24.39	56 56 " "	VII A 37.790	6 40 25.72	18 7 49.57	18 1536
165	8.0	10.5	12.8	14.8	16.8	18.7	e	40 44.52	56 56 " "	...... 44.030	6 40 45.91	18 9 50.30	18 1538
166	9.1	34.6	36.8	38.8	40.6	42.8	e	42 8.53	56 56 " "	VII A 39.890	6 42 9.86	18 8 30.65	18 1548
167	8.9	30.9	32.6	34.6	36.5	38.8	a	45 4.69	56 26 10.0 9.9	I 44.440	6 45 6.11	−17 36 38.29	−17 1639

Reduction Elements. Zone 86.

	OBSERVED.			ADOPTED.		
1894.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
December 19.3....	+0.275	+0.074	−0.005	+0.238	+0.090	−0.005
19.5....	+0.201	+0.107				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	η Eridani		τ³ Eridani		ζ Eridani		τ⁴ Eridani		η Leporis		β Canis Majoris	
CIRCLE READING.	° ′ ″ 48 8 9.25		° ′ ″ 62 52 9.35		° ′ ″ 48 2 8.75		° ′ ″ 60 58 9.20		° ′ ″ 53 2 8.60		° ′ ″ 56 44 9.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	48.150	6 33.36	43.220	4 58.71	46.965	6 10.79	44.360	5 20.83	41.715	4 30.56	44.210	5 18.08
II Red. to Mer.....	.095	1.71	.155	1.56	.885	1.71	.305	1.58	.670	1.67	.150	1.63
VI Inclination......	47.900		42.950		.740		.120		.500		43.945	
VII Refraction.......	.845	1 6.8	.925	1 56.5	.690	1 6.6	.075	1 47.7	.490	1 19.6	.985	1 31.5

	ξ² Canis Majoris		θ Canis Majoris	
CIRCLE READING.	° ′ ″ 61 42 9.30		° ′ ″ 50 44 9.45	
	r	′ ″	r	′ ″
I Microm. Eq......	45.265	5 38.36	45.740	5 47.50
II Red. to Mer......	.210	1.57	.705	1.69
VI Inclination......	.040		.525	
VII Refraction.......	.000	1 51.4	.455	1 13.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
η Eridani..........	2 51 29.43	11	+0.30	−10.90	48 15 51.1	56.3
τ³ Eridani..........	2 57 57.52	11	+0.30	−10.89	62 59 6.1	55.6
ζ Eridani..........	3 10 55.56	11	+0.30	−10.85	48 9 27.8	56.4
τ⁴ Eridani..........	3 15 2.56	11	+0.30	−10.86	61 5 19.3	56.2
η Leporis..........	5 51 49.23	11	+0.30	−10.83	53 8 0.4	55.6
δ Ursae Minoris S. P	6 6 2.99	4	−4.98	[−10.84]	305 34	....
β Canis Majoris.....	6 18 16.44	11	+0.30	−10.84	56 51 0.7	55.7
ξ² Canis Majoris....	6 30 51.27	11	+0.30	−10.84	61 49 40.6	56.0
θ Canis Majoris....	6 49 30.52	11	0.30	−10.86	50 51 12.2	55.6

h s
3.065............*dt* .... −10.875
Hourly rate .... + 0.0100

° ′ ″
Adopted Equator Point 38 56 55.92

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
2 55	29.935	36.7	36.6
3 50	29.935	35.9	36.4
4 50	29.945	35.6	35.8
5 50	29.945	34.6	35.6
6 45	29.945	34.4	34.5

Notes.
δ Ursae Minoris S. P. Somewhat unsteady.
165. Bisected 12ˢ beyond VII.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	+0.297	3 0	+13.189	+13.092	+12.990	+12.889	+12.785	+12.680
53	0.297	3 30	12.953	12.842	12.734	12.620	12.506	12.392
54	0.298	4 0	......	......	12.520	12.399	12.277	12.154
55	0.298	4 30	......	......	12.357	12.231	12.101	11.972
56	0.298	5 0	......	......	12.246	12.115	11.982	11.846
57	+0.298	5 30	......	......	12.189	12.055	11.921	11.783
		6 0	12.447	12.317	12.186	12.054	11.919	11.782
		6 30	+12.494	+12.367	+12.239	12.108	11.976	11.843
		7 0	......	......	......	+12.218	+12.091	+11.962

APPARENT RIGHT ASCENSION.	$D =$ Z. D. S. to 1894.0						R					
	52°	53°	54°	55°	56°	57°	52° 30′	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
3 0	+17.21	+16.96	+16.73	+16.48	+16.25	+16.01	.....	.....	.....	.....	.....	.....
3 30	16.45	16.25	16.05	15.84	15.64	15.44	77.75	80.61	83.60	86.76	90.05	93.54
4 0	.....	.....	15.10	14.94	14.78	14.61	77.79	80.65	83.64	86.80	90.09	93.58
4 30	.....	.....	13.91	13.78	13.66	13.54	77.84	80.70	83.70	86.86	90.16	93.65
5 0	.....	.....	12.48	12.40	12.31	12.23	77.88	80.74	83.73	86.90	90.20	93.69
5 30	.....	.....	10.84	10.79	10.76	10.72	77.89	80.76	83.75	86.92	90.22	93.71
6 0	9.00	9.01	9.01	9.02	9.03	9.04	77.95	80.82	83.81	86.98	90.28	93.78
6 30	+ 6.92	+ 6.98	+ 7.03	7.09	7.13	7.19	78.04	80.91	83.91	87.08	90.39	93.89
7 0	.....	.....	.....	+ 5.04	+ 5.13	+ 5.23	78.11	80.98	83.98	87.16	90.47	93.97

1895 JANUARY 4. ZONE 87. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°	
1	9.6	5.4	7.4	9.3	11.3	13.4	a	31 39.38	56 34 10.0	6.7	III B	40.480	3 31 37.99	−17 38 41.45	−17	698
2	......	45.5	47.6	49.7	54.2	55.7	c_3 d_2	31 45.46	56 34 “	“	VII A	48.860	3 31 44.05	17 47 53.86	17	699
3	8.9	45.2	47.4	49.6	51.8	53.8	c	37 49.56	56 22 10.0	6.3	III	40.820	3 37 48.13	17 30 3.37	17	718
4	9.0	21.8	23.6	25.6	27.6	29.9	a	44 55.74	56 36 10.0	6.4	I	46.260	3 44 54.22	17 45 49.46	17	734
5	9.0	53.6	55.7	58.0	0.1	2.4	c	44 57.96	55 48 9.4	3.9	V	42.450	3 44 56.52	16 56 36.02	17	735
6	8.9	41.8	44.0	46.3	48.4	50.6	c	47 46.22	56 40 10.0	6.3	III	45.815	3 47 44.66	17 49 44.22	17	746
7	8.7	45.0	46.7	48.7	50.6	52.9	a	50 18.75	56 10 10.0	6.7	I	41.185	3 50 17.23	17 18 13.02	17	755
8	9.1	52.0	54.0	56.2	58.5	0.8	c	50 56.30	56 0 10.0	5.5	III	42.910	3 50 54.79	17 8 47.19	17	756
9	8.9	50.2	52.4	54.6	56.7	59.0	c	52 54.58	56 44 10.0	6.0	III B	42.010	3 52 52.98	17 49 19.53	17	760
10	9.7	51.3	53.4	55.7	57.9	0.0	c	53 55.66	56 44 “	“	III A	45.600	3 53 54.03	−17 56 57.18	−18	712
11	9.4	34.7	36.6	38.6	40.5	42.7	a	3 8.59	56 8 10.0	5.4	I	45.410	4 3 6.97	−17 17 38.67	−17	796

Reduction Elements. Zone 87.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
January 4.3....	+0.444	+0.234	+0.514	+0.444	+0.230	+0.514
4.4....		+0.226				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ε Eridani		τ^6 Eridani		o^1 Eridani		53 Eridani	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		48 40 8.60		62 24 7.50		45 58 7.20		53 20 6.75	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	41.415	4 24.17	41.540	4 26.67	41.210	4 20.35	46.205	5 55.90
II	Red. to Mer.	.375	1.70	.495	1.57	.120	1.73	.120	1.67
VI	Inclination	.150		.290		40.955		45.935	
VII	Refraction	.105	1 10.5	.240	1 58.4	.960	1 4.2	.915	1 23.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Eridani	3 28 13.95	11	+1.00	−14.92	48 45 45.0	57.8
r⁶ Eridani	3 42 34.93	11	+1.10	−14.97	62 30 34.1	57.5
o¹ Eridani	4 6 59.50	11	+0.98	−14.91	46 3 33.5	56.3
19 Ursae Minoris S. P.	4 14 0.79	8	−0.32	[−14.94]	295 6	....
53 Eridani	4 33 37.57	11	+1.03	−15.03	53 27 27.8	57.0

h 3.964 ....*dt* .... s −14.958
Hourly rate 0.0000
Adopted Equator Point . ...38° 56′ 57.15″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 30	30.045	22.7	21.7
4 27	30.055	21.2	20.5

Notes.
1, 11, o¹ Eridani, 53 Eridani Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0			*D* = Z. D. S. to 1895.0			*R*		
			55°	56°	57°	55°	56°	57°	55°	56°	57°
°	s	h m	s	s	s	″	″	″	″	″	″
55	+1.037	3 30	+12.718	+12.606	+12.493	+1.10	+0.85	+0.58	88.19	91.54	95.04
56	1.045	4 0	+12.461	12.341	12.220	+2.13	1.91	1.68	88.31	91.66	95.17
57	+1.052	4 30	....	+12.126	+11.999	......	+2.90	+2.70	.....	.....	.....

1895 JANUARY 11. ZONE 88. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.0	42.7	44.7	46.7	48.6	50.9	a	4 16.80	56 48 10.0 8.9	I A	44.040	4 4 13.34	−18 0 24.16	−18 762
2	8.6	1.4	3.2	5.0	7.2	9.3	a	4 35.28	56 48 " "	III B	39.680	4 4 31.84	17 52 34.21	17 801
3	8.7	51.6	53.0	57.5	59.5	1.8	b_2 c_3	5 1.77	56 34 8.8 7.5	III	47.750	4 4 58.34	17 44 21.05	17 805
4	8.8	7.8	9.9	12.0	16.4	18.0	c_3 d_2	5 7.74	56 34 " "	VI A	42.430	4 5 4.30	17 45 55.85	17 806
5	9.1	12.7	14.9	17.0	19.3	21.5	c	6 17.08	56 52 10.0 9.0	III	47.280	4 6 13.60	18 2 14.85	18 767
6	8.7	42.7	44.6	46.4	48.4	50.6	a	9 16.57	56 34 9.7 8.4	I	45.570	4 9 13.10	17 43 39.92	17 825
7	9.1	13.9	15.9	17.9	19.7	22.0	a	9 47.92	56 34 " "	I A	40.590	4 9 44.45	17 45 19.10	17 829
8	9.3	37.5	39.7	42.0	44.2	46.4	c	10 41.96	56 48 10.0 9.5	III	44.150	4 10 38,45	17 57 16.68	18 790
9	8.9	56.8	58.5	0.5	2.4	4.7	a	12 30.55	56 8 9.2 8.1	I	47.805	4 12 27.11	17 18 22.45	17 836
10	9.2	53.7	55.6	57.5	59.5	1.6	a	13 27.53	56 8 " "	I B	40.565	4 13 24.09	−17 12 50.07	−17 840
11	8.6	30.7	32.9	35.0	37.2	39.4	c	13 35.04	56 8 " "	III A	37.980	4 13 31.59	−17 18 30.77	−17 841
12	8.1	35.0	36.9	39.0	40.9	43.0	a	16 9.04	56 48 10.0 9.1	I	48.690	4 16 5.48	17 58 43.95	18 811
13	9.4	22.5	24.4	26.3	28.3	30.6	a	22 56.38	56 6 10.0 9.2	I	47.430	4 22 52.85	17 16 20.55	17 881
14	8.0	1.2	3.3	5.4	7.6	9.9	c	23 5.48	56 6 " "	III A	48.780	4 23 1.95	17 20 2.95	17 883
15	8.7	58.7	0.9	3.2	5.3	7.5	c	24 3.12	56 28 9.0 8.2	III	44.535	4 23 59.53	17 37 27.55	17 889
16	9.0	2.7	4.8	7.0	9.2	11.4	c	26 7.02	56 24 10.5 10.4	III	43.075	4 26 3.43	17 33 2.05	17 893
17	7.8	27.6	29.5	31.4	33.4	35.7	a	28 1.51	56 20 10.0 9.2	I	42.470	4 27 57.91	17 28 48.26	17 902
18	8.7	13.0	15.1	17.3	19.5	21.7	c	29 17.32	56 32 9.5 9.0	III	42.620	4 29 13.69	17 40 53.93	17 905
19	9.3	29.3	31.3	33.6	35.8	38.0	c	30 33 60	56 32 " "	III B	48.340	4 30 29.96	17 39 30.43	17 910
20	8.0	21.0	22.8	24.9	26.8	28.9	a	31 54.90	56 32 " "	I B	46.400	4 31 51.25	−17 38 51.82	−17 913
21	9.0	51.4	53.3	55.4	57.3	59.4	a	32 25.40	56 32 " "	I A	45.705	4 32 21.74	−17 45 7.08	−17 917
22	8.2	49.5	51.3	53.4	55.3	57.6	a	33 23.43	56 32 " "	I B	41.190	4 33 19.78	17 37 12.48	17 919
23	7.8	36.5	38.7	40.9	43.1	45.2	c	33 40.88	56 50 10.0 9.4	V	48.690	4 33 37.17	18 0 55.52	18 883
24	8.0	44.7	46.8	48.6	50.6	52.8	a	35 18.64	56 0 10.0 8.6	I	44.780	4 35 15.02	17 9 34.44	17 927
25	8.2	57.9	0.0	2.3	4.5	6.6	c	36 2.26	56 42 10.0 9.1	III	47.970	4 35 58.55	17 52 40.39	17 928
26	9.2	49.9	52.2	54.3	56.5	58.6	c	36 54.30	56 42 " "	III B	45.670	4 36 50.59	17 48 42.82	17 930
27	8.9	24.9	27.0	29.1	31.4	33.5	c	38 29.18	56 52 10.0 9.9	III	42.380	4 38 25.44	18 0 55.12	18 902
28	8.0	29.8	31.6	33.6	35.6	37.8	a	42 3.76	56 50 10.0 9.5	I	46.785	4 41 59.99	18 0 18.98	18 916
29	8.5	17.0	18.7	20.8	22.9	25.0	a	42 50.86	56 16 9.5 8.0	I	44.405	4 42 47.16	17 25 30.85	17 952
30	9.3	17.9	20.0	22.2	24.5	26.6	c	43 22.24	56 8 9.6 8.0	III B	47.615	4 43 18.56	−17 15 20.46	−17 955
31	9.0	15.6	17.7	19.7	21.9	24.2	c	44 19.82	56 8 " "	V B	44.030	4 44 16.13	−17 14 13.84	−17 959
32	8.1	3.0	5.0	6.7	8.7	13.6	e_2VII	44 34.76	56 8 " "	VI	46.620	4 44 31.06	17 18 18.28	17 960
33	9.4	27.1	29.0	31.0	32.9	35.2	a	48 0.91	55 34 9.5 7.9	I	45.580	4 47 57.25	16 43 53.50	16 981
34	9.1	36.0	37.9	39.8	41.8	44.0	a	49 9.98	56 50 10.0 8.6	I	44.030	4 49 6.16	17 59 28.81	18 949
35	8.9	31.5	33.6	35.8	38.0	40.2	c	49 35.82	56 34 9.8 8.2	III	45.720	4 49 32.03	17 44 2.25	17 983
36	8.6	37.5	39.4	41.3	43.3	45.5	a	51 11.47	56 46 9.2 8.2	I	43.960	4 51 7.65	17 55 27.54	17 990
37	7.0	16.4	18.1	20.2	22.1	24.5	a	51 50.32	56 46 " "	III B	48.330	4 51 46.50	17 53 39.85	17 994
38	9.2	44.4	46.2	48.2	50.3	52.5	a	53 18.31	56 18 8.7 6.7	I	43.980	4 53 14.53	17 27 26.42	17 999
39	7.8	48.6	50.4	52.5	54.4	56.7	a	54 22.59	56 48 9.6 8.8	I	44.200	4 54 18.74	17 57 34.21	18 966
40	8.5	41.8	43.7	45.7	47.6	49.8	a	0 15.81	56 52 10.5 10.0	I	43.560	5 0 11.92	−18 1 25.83	−18 990

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
41	8.9	15.0	17.2	19.4	21.5	23.8	c	0 19.38	56 52 10.5 10.0	III A	43.880	5 0 15.48	−18 4 48.45	−18 991
42	8.1	8.3	9.9	14.0	16.3	18.4	$b_2 c_3$	1 18.40	53 46 10.5 8.2	III	43.205	5 1 14.88	14 55 11.24	14 1039
43	8.8	46.0	48.1	52.4	54.0	56.8	$c_4 d_3$	1 43.86	54 26 10.0 7.5	VI	40.550	5 1 40.26	15 34 24.32	15 944
44	9.0	33.3	35.4	37.6	39.9	42.0	c	4 37.64	56 52 9.3 8.5	III	45.680	5 4 33.71	18 2 9.10	18 1011
45	9.3	12.0	14.0	16.3	18.5	20.5	c	6 16.26	55 26 9.0 7.0	III	46.770	5 6 12.50	16 36 25.37	16 1061
46	8.9	11.5	13.2	15.2	17.2	19.4	a	7 45.28	56 12 9.5 9.0	III	47.980	5 7 41.42	17 22 52.89	17 1045
47	8.1	16.0	17.8	19.8	21.8	24.0	a	8 49.98	56 54 10.5 10.3	I	47.750	5 8 46.03	18 4 50.38	18 1029
48	8.0	55.0	57.3	59.4	1.5	3.7	c	8 59.38	55 52 9.4 7.4	V	43.860	5 8 55.56	17 1 34.24	17 1052
49	8.0	35.6	37.8	39.9	41.9	43.7	e	9 9.74	56 4 9.0 7.4	VII	43.240	5 9 5.90	17 13 24.40	17 1054
50	7.7	27.3	28.9	30.9	32.9	35.0	a	13 1.06	56 46 10.4 9.0	I B	45.730	5 12 57.10	−17 52 58.56	−17 1073
51	9.2	45.4	47.2	49.1	51.1	53.4	a	13 19.32	56 46 " "	III A	42.015	5 13 15.35	−17 58 17.69	−18 1044
52	8.7	50.2	52.0	54.0	56.0	58.2	a	14 24.10	56 30 11.0 9.5	III	46.965	5 14 20.17	17 40 38.40	17 1081
53	9.2	52.6	54.1	58.4	0.6	2.8	$b_2 c_3$	15 2.79	56 40 10.2 8.7	III	48.020	5 14 58.83	17 50 58.67	17 1085
54	9.0	50.0	52.2	54.4	56.6	58.8	c	15 54.40	56 40 " "	III B	46.800	5 15 50.44	17 47 21.80	17 1089
55	7.2	59.9	1.6	3.6	5.6	7.8	a	17 33.73	56 32 9.7 7.3	I	45.215	5 17 29.78	17 42 2.60	17 1098
56	9.4	0.9	2.7	4.7	6.8	8.8	a	18 34.73	56 4 9.7 7.7	I	43.430	5 18 30.84	17 13 27.54	17 1107
57	8.6	41.2	43.3	45.5	47.7	49.8	c	18 45.50	56 4 " "	V A	50.715	5 18 41.60	17 19 5.60	17 1108
58	8.7	22.6	24.8	26.9	29.0	31.4	c	20 26.94	56 4 " "	III B	49.940	5 20 23.04	17 12 21.49	17 1120
59	8.6	44.0	45.5	47.6	49.6	51.9	a	22 17.45	54 40 11.1 9.1	I	48.140	5 22 13.71	15 50 56.79	15 1040
60	9.2	36.5	38.4	40.4	42.3	44.5	a	23 10.15	54 40 " "	I	47.575	5 23 6.40	−15 50 46.35	−15 1048
61	8.0	32.2	34.5	36.7	38.9	41.0	c	23 36.66	56 56 10.1 10.0	V	42.130	5 23 32.62	−18 5 12.75	−18 1095
62	9.2	36.3	38.0	40.0	42.1	44.3	a	26 9.92	55 0 10.0 8.2	I	45.450	5 26 6.12	16 10 6.91	16 1157
63	9.3	50.2	52.1	54.0	56.0	58.4	a	27 23.93	55 0 " "	I A	41.710	5 27 20.12	16 12 10.22	16 1163
64	8.6	4.9	6.8	8.7	10.8	13.0	a	27 38.89	56 40 10.5 9.7	III	45.915	5 27 34.87	17 50 24.64	17 1162
65	......	49.2	51.0	53.0	55.1	57.3	a	28 23.18	56 40 " "	I A	45.950	5 28 19.15	17 53 38.23	17 1166
66	8.8	44.9	46.6	48.6	50.6	52.9	a	29 18.78	56 40 " "	III	48.550	5 29 14.76	17 51 16.00	17 1170
67	8.8	10.7	12.8	14.9	17.0	19.4	c	30 14.96	56 26 10.6 10.2	III	48.400	5 30 10.96	17 37 13.08	17 1174
68	9.4	6.0	7.8	9.8	11.9	13.9	a	32 39.83	56 4 10.4 9.0	I	44.800	5 32 35.88	17 14 1.27	17 1187
69	8.6	14.0	15.9	17.9	19.8	22.0	a	34 47.98	56 44 10.2 9.1	I	42.340	5 34 43.92	17 53 17.14	17 1198
70	8.0	51.5	53.6	55.9	58.0	0.1	c	34 55.82	56 44 " "	V	45.325	5 34 51.76	−17 54 18.24	−17 1199
71	8.4	22.5	24.1	26.3	28.4	30.3	a	34 56.38	56 44 " "	III	41.495	5 34 52.32	−17 53 2.95	−17 1200
72	9.3	26.0	28.5	30.5	32.3	34.4	e	35 0.18	56 44 " "	VII	48.590	5 34 56.12	17 55 22.49	17 1203
73	8.7	5.2	7.4	9.6	11.8	13.9	c	37 9.58	56 36 11.5 10.8	III	44.090	5 37 5.53	17 45 54.86	17 1211
74	9.5	39.0	41.0	45.4	47.0	49.8	($c_4 d_3$)	38 36.76	56 36 " "	I A	46.095	5 38 32.70	17 49 46.60	17 1221
75	8.9	49.7	51.5	53.5	55.4	57.7	a	40 23.54	56 18 11.5 10.0	I	43.460	5 40 19.53	17 27 40.93	17 1230
76	8.6	50.8	52.7	54.7	56.5	58.8	a	41 24.69	56 18 " "	I	42.525	5 41 20.67	17 27 23.43	17 1235
77	9.0	38.3	40.3	42.5	44.7	46.9	c	41 42.54	54 6 11.6 9.0	V	45.870	5 41 38.79	15 16 24.32	15 1159
78	9.0	32.3	34.5	36.7	39.0	41.1	c	42 36.72	56 58 9.8 9.1	V	42.670	5 42 32.62	18 7 31.37	18 1186
79	9.0	26.0	28.4	30.2	32.1	34.2	e	46 0.02	56 48 9.8 8.5	VII	43.730	5 45 55.92	17 57 53.97	17 1260
80	8.6	5.3	7.5	9.7	11.8	16.2	$c_2 d_1$	47 7.50	56 48 " "	V B	46.965	5 47 3.40	−17 55 41.21	−17 1267
81	8.4	16.5	18.9	20.8	22.6	24.7	e	47 50.60	56 28 9.7 8.5	V B	44.270	5 47 46.54	−17 34 48.67	−17 1271
82	9.3	28.4	30.6	32.6	34.5	36.6	e	48 2.44	56 28 " "	......	46.540	5 47 58.37	17 38 48.34	17 1272
83	8.9	57.0	59.3	1.3	3.2	5.2	e	49 31.00	57 0 9.0 9.3	VII	44.120	5 49 26.86	18 10 3.79	18 1226
84	9.1	13.9	15.5	19.5	21.9	24.0	$b_2 c_3$	51 24.06	56 46 9.5 7.2	III A	51.170	5 51 19.94	18 1 29.57	18 1236
85	8.1	42.8	44.9	47.0	49.3	51.6	c	51 47.12	56 46 " "	V B	46.995	5 51 43.01	17 53 43.03	17 1298
86	9.1	6.2	8.3	12.8	14.4	17.2	$c_4 d_3$	52 4.10	56 46 " "	VI B	38.100	5 52 0.00	17 50 53.23	17 1303
87	8.6	4.2	6.3	8.5	10.7	12.9	c	58 8.52	56 40 9.9 8.7	III	46.950	5 58 4.40	17 50 57.83	17 1334
88	8.7	39.5	41.7	43.8	46.0	48.4	c	58 43.88	56 40 " "	III B	47.610	5 58 39.76	17 47 56.92	17 1339
89	8.2	21.7	23.7	25.9	28.1	30.3	c	1 25.94	55 4 9.0 6.5	III	43.000	6 1 22.02	16 13 35.89	16 1353
90	9.0	14.4	16.2	18.3	20.2	22.6	a	2 48.38	56 34 8.5 7.0	I	47.920	6 2 44.25	−17 45 14.77	−17 1359
91	8.5	51.0	53.2	55.4	57.5	59.7	c	2 55.36	56 34 " "	III A	47.150	6 2 51.23	−17 48 16.49	−17 1360
92	7.6	26.8	28.5	30.6	32.6	34.7	a	5 0.74	56 56 8.9 7.5	I	45.450	6 4 56.56	18 6 30.05	18 1316
93	9.0	30.0	31.9	33.9	35.9	38.1	a	6 3.96	56 24 9.6 8.2	I B	48.550	6 5 59.86	17 32 15.13	17 1385
94	9.1	54.7	56.6	58.6	0.5	2.8	a	6 28.65	56 24 " "	III A	45.695	6 6 24.54	17 37 50.80	17 1387
95	7.0	19.5	21.6	23.8	26.0	28.3	c	7 23.84	56 58 9.0 7.8	III	49.260	6 7 19.66	18 9 46.57	18 1334
96	8.0	21.6	23.7	25.9	28.0	30.2	c	8 25.88	56 34 8.9 7.2	III	44.570	6 8 21.75	17 44 15.35	17 1398
97	8.9	27.8	29.6	31.6	33.7	35.9	a	10 1.76	56 34 " "	I A	45.610	6 9 57.62	17 47 48.62	17 1409
98	8.7	11.0	12.7	17.0	19.2	21.5	$b_2 c_3$	10 21.38	56 52 8.3 6.7	III	47.235	6 10 17.21	18 3 7.82	18 1349
99	6.8	10.4	12.2	14.3	16.2	18.5	a	11 44.17	55 24 8.0 5.0	I	47.400	6 11 40.18	16 35 3.90	16 1415
100	8.9	51.9	54.0	56.3	58.5	0.7	c	11 56.28	56 44 10.0 8.3	V	44.420	6 11 52.13	−17 54 17.49	−17 1421
101	8.8	36.9	39.0	41.2	43.4	45.6	c	13 41.22	56 4 9.4 7.9	III	45.025	6 13 37.14	−17 14 25.44	−17 1434
102	8.8	46.9	48.7	50.7	52.6	54.9	a	16 20.82	56 42 9.2 7.8	I	43.590	6 16 16.66	17 51 59.12	17 1452
103	8.8	34.9	37.0	39.1	41.4	43.6	c	16 39.20	56 42 " "	V B	38.750	6 16 35.05	17 47 16.25	17 1457
104	8.6	8.8	10.6	12.5	14.6	16.9	a	16 42.74	56 42 " "	I A	41.945	6 16 38.57	17 54 42.27	17 1458
105	......	48.0	50.3	52.2	54.0	56.0	e	18 21.95	56 44 7.5 6.0	VII	44.470	6 18 17.78	17 54 20.57	17 1467
106	8.2	49.2	51.4	53.7	57.9	59.4	$c_3 d_2$	19 49.24	56 40 7.5 5.9	V	43.070	6 19 45.08	17 49 52.54	17 1476
107	8.7	40.5	42.2	44.0	46.2	48.4	a	22 14.37	57 0 10.0 9.0	I	44.665	6 22 10.16	18 10 24.48	18 1424
108	8.9	26.0	28.0	30.4	32.6	34.8	c	22 30.36	56 46 10.0 9.5	III	42.755	6 22 26.18	17 55 49.35	17 1494
109	8.0	46.4	48.2	50.2	52.1	54.3	a	26 20.29	56 40 9.2 7.5	I	45.930	6 26 16.12	17 50 48.34	17 1515
110	8.8	28.7	30.9	33.1	35.3	37.5	c	26 33.10	56 52 8.6 7.5	V A	48.695	6 26 28.90	−18 7 0.05	−18 1455
111	7.5	1.6	3.5	5.5	7.4	9.6	a	27 35.60	56 52 " "	III B	45.280	6 27 31.41	−17 59 24.95	−17 1521
112	9.1	1.4	3.4	5.6	7.9	10.1	c	28 5.68	56 52 " "	III B	46.490	6 28 1.49	−17 59 48.41	−17 1526

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
113	8.6	29.4	31.2	33.0	35.1	37.4	a	29 3.30	56	52	8.6	7.5	I B	47.280	6 28 59.11	−18 0 2.03	−17 1533
114	9.2	10.9	12.9	15.2	17.4	19.6	c	29 15.20	56	52	"	"	V	49.930	6 29 11.00	18 4 10.55	18 1466
115	9.0	58.5	0.8	2.7	4.6	6.7	e	30 32.50	56	52	"	"	VII B	37.070	6 30 28.32	17 56 52.01	17 1542
116	8.8	23.8	25.6	27.6	29.6	31.7	a	32 57.72	56	40	10.0	9.5	I A	38.390	6 32 53.55	17 51 42.60	17 1560
117	9.1	44.5	46.3	48.2	50.2	52.5	a	34 18.40	56	40	"	"	I A	42.075	6 34 14.22	17 52 53.93	17 1567
118	9.0	15.6	17.6	20.0	22.3	24.4	c	34 19.98	56	40	"	"	III	44.995	6 34 15.81	17 50 37.41	17 1568
119	9.0	50.9	53.0	55.2	57.3	59.6	c	37 55.20	56	6	10.2	9.1	III	44.170	6 37 51.11	17 16 21.20	17 1591
120	8.8	42.7	44.9	47.1	49.4	51.6	c	42 47.14	56	46	9.7	9.5	III	49.060	6 42 42.95	−17 57 59.38	−17 1624
121	8.9	20.7	23.0	25.0	27.4	29.6	c	45 25.14	56	16	9.0	8.5	III	46.560	6 45 21.02	−17 27 10.03	−17 1641
122	8.8	48.7	50.8	52.9	55.2	57.4	c	53 53.00	56	44	9.3	8.2	III	48.815	6 53 48.83	17 55 58.65	17 1706
123	8.9	30.9	33.0	35.2	......	......	c	55 35.20	55	22	8.6	7.7	III	43.040	6 55 31.20	16 32 3.46	16 1698
124	9.0	10.9	13.0	15.3	17.5	19.7	c	57 15.28	56	48	9.0	8.0	III	46.720	6 57 11.11	17 59 19.89	17 1731
125	8.9	42.6	44.4	46.6	48.5	50.8	a	58 16.59	56	28	9.2	7.2	III	42.950	6 58 12.47	17 38 6.55	17 1742^{2}
126	8.9	27.3	29.4	31.5	35.8	37.4	c_3 d_2	0 27.20	56	26	8.9	7.8	V	47.430	7 0 23.08	17 37 35.28	17 1761
127	8.7	38.7	40.6	42.6	44.5	46.8	a	4 12.69	56	40	8.7	8.0	I	44.950	7 4 8.55	17 50 46.36	17 1796
128	9.0	41.4	43.2	45.0	47.1	49.4	a	5 15.23	56	28	8.5	7.0	I B	46.390	7 5 11.12	17 35 59.32	17 1808
129	9.0	2.0	3.9	5.8	7.8	10.1	a	5 35.95	56	28	"	"	I A	48.755	7 5 31.83	17 43 13.25	17 1811
130	8.6	55.7	57.6	59.4	1.4	3.7	a	6 29.62	56	48	8.4	7.7	III B	36.730	7 6 25.48	−17 52 57.85	−17 1824
131	9.1	0.5	2.0	6.5	8.5	10.8	b_2 c_3	7 10.76	56	48	"	"	III	43.390	7 7 6.61	−17 58 19.82	−17 1829
132	9.0	38.2	40.5	42.4	44.2	46.4	e	7 12.18	56	48	"	"	VII B	47.270	7 7 8.03	17 56 23.75	17 1830
133	9.0	19.2	21.3	23.4	25.1	27.2	e	7 53.06	56	48	"	"	VII A	46.340	7 7 48.90	18 2 34.47	17 1842
134	8.7	24.9	26.6	28.8	30.8	33.0	a	12 58.91	56	54	9.9	9.0	I	45.560	7 12 54.75	18 5 3.75	18 1766
135	9.1	4.2	6.4	8.5	10.8	12.9	c	13 8.56	56	54	"	"	V B	44.170	7 13 4.41	18 1 27.02	17 1898
136	8.8	2.3	4.2	6.2	8.2	10.5	a	14 36.33	56	40	10.0	9.4	I	47.780	7 14 32.21	17 51 46.49	17 1913
137	9.0	42.3	44.5	46.6	48.9	51 0	c	14 46.66	56	40	"	"	III A	45.720	7 14 42.53	17 54 23.52	17 1914
138	8.7	43.2	45.2	47.0	49.0	51.4	a	16 17.26	56	56	9.7	7.8	I	47 930	7 16 13.11	18 7 50.08	18 1793
139	9.3	39.6	41.5	43.4	45.5	47.7	a	17 13.61	56	44	9.7	8.0	III A	45.170	7 17 9.48	17 58 13.37	17 1929
140	9.3	33.6	35.7	37.8	40.0	42.2	c	17 37.86	56	44	"	"	III B	44.280	7 17 33.75	−17 51 28.13	−17 1933
141	8.6	28.4	30.3	32.3	34.2	36.4	a	19 2.43	56	58	9.4	8.0	III	46.840	7 18 58.30	−18 9 32.36	−18 1815
142	8.0	21.7	23.6	25.5	27.4	29.7	a	19 55.69	56	58	"	"	I	45.990	7 19 51.56	18 9 14.44	18 1822
143	9.0	18.8	20.6	22 5	24.4	26.7	a	20 52.40	55	6	9.3	7.0	III	41.350	7 20 48.48	16 15 40.97	16 1949
144	8.9	0.0	2.2	4.4	6.7	8.8	c	22 4.42	55	6	"	"	III	44.900	7 22 0.50	16 16 49.61	16 1958
145	9.0	55.8	57.7	59.7	1.5	3.7	a	23 29.46	55	6	"	"	I B	36.260	7 23 25.56	16 10 48.59	16 1963
146	9.0	37.7	39.6	41.6	43.6	45.8	a	24 11.47	55	6	"	"	III A	48.460	7 24 7.55	16 21 13.29	16 1969
147	9.0	38.9	40.7	42.8	44.9	47.0	a	25 12.98	57	4	8.2	7.0	I	46.690	7 25 8.85	18 15 29.33	18 1863
148	9.2	17.2	19.4	21.7	23.8	26.0	c	25 21.62	57	4	"	"	V B	49.995	7 25 17.48	18 13 22.72	18 1865
149	8.6	26.5	28.4	30.3	32.3	34.4	a	33 0.50	57	2	9.2	7.2	I	49.540	7 32 56.40	18 14 27.75	18 1932
150	9.1	16.6	18.4	20.4	22.4	24.7	a	34 50.56	56	46	8.2	7.2	I B	(46).190	7 34 46.50	−17 54 8 90	−17 2077
151	9.2	54.3	56.5	58.6	1.0	3.0	c	34 58.68	56	46	"	"	III A	47.500	7 34 54.60	−18 1 4.44	−17 2078

Reduction Elements. Zone 88.

1895.	OBSERVED.			ADOPTED.		
	c	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
January 11.3....	+0.515	+0.092	+0.478	+0.480	+0.109	+0.461
11.5....	+0.446	+0.126	+0.444			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	γ Eridani		Lalande 7685		64 Eridani		β Eridani		α Canis Majoris		θ Canis Majoris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	52 38 9.55		57 10 9.95		51 32 7.55		44 4 9.25		55 24 9.45		50 44 8.45	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.185	5 55.44	44.050	5 14.60	43.490	5 4.21		5 4.85	45.230	5 37.08	46.270	5 57.15
II Red. to Mer......	.090	1.67	43.990	1.63	.450	1.68		1.75	.160	1.65	.210	1.69
VI Inclination	45.920		.790		.240		43.420	2.20	44.930		45.990	
VII Refraction	.885	1 17.6	.730	1 31.8	.210	1 14.7	.345	57.5	.930	1 26.4	.965	1 13.0

	γ Canis Majoris		26 Monocerotis	
	° ′ ″		° ′ ″	
CIRCLE READING.	54 18 7.95		48 8 5.80	
	r	′ ″	r	′ ″
I Microm. Eq		6 1.38	46.550	6 3.52
II Red. to Mer......		1.66	.545	1.71
VI Inclination ..	46.340	2.20	.360	
VII Refraction... ...	.320	1 23.0	.310	1 6.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Eridani	3 53 24.76	11	+ 0.94	−16.73	52 45 24.3	59.2
Lalande 7685	4 2 11.44	11	+ 0.98	−16.66	57 16 58.0	58.2
64 Eridani	4 55 20.09	11	+ 0.93	−16.66	51 38 28.1	58.6
ε Ursae Minoris S. P.	4 56 54.02	3	− 1.04	[−16.58]	301 10	....
β Eridani	5 2 58.33	11	+ 0.88	−16.63	44 10 15.5	59.5
α Canis Majoris	6 40 48.80	11	+ 0.96	−16.83	55 31 14.6	59.3
ϑ Canis Majoris	6 49 36.10	11	+ 0.93	−16.81	50 51 20.3	58.7
γ Canis Majoris	6 59 17.95	11	+ 0.95	−16.87	54 25 36.2	58.9
λ Ursae Minoris S. P.	7 27 0.63	3	−10.24	[−17.57]	307 54	....
26 Monocerotis	7 36 31.24	11	+ 0.91	−16.79	48 15 17.7	59.1

h			s
4.475	*dt*		−16.670
		Hourly rate	− 0.0607

Adopted Equator Point .... 38° 56′ 58″.94

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 54	29.645	37.8	36.6
4 40	29.635	37.4	35.5
5 44	29.635	36.1	34.4
6 35	29.635	35.4	33.5
7 38	29.625	34.2	32.5

Notes.

61. Clouds.
82. Bisected 10ˢ beyond VII.
125. Close double.
λ Ursae Minoris S. P. Steady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
53	+0.942
54	0.950
55	0.958
56	0.966
57	+0.974

APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. S. to 1895.0				
	53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
h m	s	s	s	s	s	″	″	″	″	″
4 0	......	......	......	+12.372	+12.252	....	....	....	+0.89	+0.66
4 30	......	......	+12.267	12.142	12.016	....	....	+1.95	1.74	1.53
5 0	+12.347	+12.222	12.094	11.964	11.833	+3.06	+2.87	2.69	2.51	2.33
5 30	+12.229	12.102	11.971	11.839	11.706	+3.61	3.46	3.31	3.17	3.03
6 0	......	+12.032	11.903	11.771	11.637	....	+3.94	3.84	3.74	3.64
6 30	......	......	11.888	11.758	11.627	....	....	4.27	4.20	4.15
7 0	......	......	11.929	11.803	11.677	....	....	4.55	4.53	4.51
7 30	......	......	+12.026	11.906	11.785	....	....	+4.71	4.73	4.76
8 0	......	......	......	+12.064	+11.952	....	....	....	+4.82	+4.89

APPARENT RIGHT ASCENSION.	*R*				
	53° 30′	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″	″
4 0	......	......	85.86	89.12	92.58
4 30	......	......	85.96	89.23	92.68
5 0	79.98	82.95	86.08	89.35	92.81
5 30	80.08	83.04	86.18	89.45	92.92
6 0	......	83.21	86.36	89.64	93.11
6 30	......	......	86.60	89.89	93.37
7 0	......	......	86.70	89.99	93.48
7 30	......	......	86.78	90.07	93.56

1895 JANUARY 14. ZONE 89. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.9	5.9	7.6	9.7	11.6	14.0	a	4 39.62	55 34 10.0	10.6	I B	44.460	4 4 35.10	−16 40 7.29	−16 793
2	7.5	15.8	18.1	19.9	21.9	23.9	e	4 49.97	55 34 "	"	VII B	40.610	4 4 45.44	16 38 58.73	16 796
3	9.0	42.8	45.3	47.2	49.0	50.9	e	6 16.97	56 20 10.0	10.2	VII B	38.175	4 6 12.34	17 24 14.77	17 810
4	7.9	30.2	32.3	34.6	36.8	38.9	c	7 34.56	56 20 "	"	III A	41.870	4 7 29.91	17 31 51.26	17 816
5	9.1	55.0	57.1	59.2	1.5	3.7	c	10 59.30	56 0 10.0	10.6	III	43.240	4 10 54.67	17 9 3.61	17 833
6	8.9	54.5	56.3	58.3	0.3	2.5	a	15 28.32	55 58 10.0	10.1	I A	44.330	4 15 23.65	17 10 38.64	17 853
7	8.0	41.4	43.3	45.3	47.2	49.5	a	16 15.26	55 58 "	"	I B	44.220	4 16 10.59	17 4 8.47	17 856
8	9.0	51.8	53.6	55.8	57.5	59.8	a	21 25.47	54 58 10.0	9.0	I B	50.465	4 21 20.87	16 6 6.92	16 855
9	8.9	19.1	21.0	22.9	24.9	27.1	a	21 52.78	54 58 "	"	III A	45.550	4 21 48.17	16 11 3.03	16 857
10	8.8	42.3	44.1	46.0	48.0	50.3	a	26 16.00	55.30 10.0	11.1	I	46.420	4 26 11.30	−16 40 7.84	−16 878
11	8.9	12.9	15.0	17.1	19.4	21.6	c	26 17.20	55 30 "	"	III	48.380	4 26 12.50	−16 40 47.40	−16 879
12	9.3	18.9	21.1	23.4	25.6	27.7	c	30 23.34	56 46 10.0	10.0	III	45.515	4 30 18.46	17 55 57.65	18 872
13	9.0	39.7	41.6	43.5	45.4	47.6	[illegible]	35 13.44	55 36 10.0	10.0	I	45.350	4 35 8.68	16 45 50.90	16 916
14	9.4	34.4	36.5	38.7	40.8	43.0	c	35 38.68	55 36 "	"	III	47.370	4 35 33.91	−16 46 31.80	−16 919

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
15	9.1	56.1	57.9	59.8	1.9	4.0	a	39 29.95	56 24 10.0 10.6	I A 42.450	4 39 25.05	−17 36 14.45	−17 938
16	9.0	5.4	7.2	9.0	11.2	13.3	a	40 39.22	56 24 " "	I 45.790	4 40 34.32	17 34 4.52	17 942
17	8.8	7.6	9.7	11.9	14.0	16.4	c	41 11.92	56 24 " "	III B 43.055	4 41 7.02	17 30 0.38	17 945
18	9.1	9.0	10.9	12.8	14.8	17.0	a	49 42.84	56 4 10.0 11.6	I B 41.090	4 49 37.93	17 9 23.88	17 984
19	9.0	39.0	40.7	42.7	44.7	46.8	a	50 12.74	56 4 " "	I A 42.980	4 50 7.82	17 16 28.75	17 986
20	9.1	6.0	7.7	9.6	11.7	13.9	a	51 39.74	56 4 " "	I A 47.375	4 51 34.81	−17 17 53.74	−17 992
21	7.7	4.2	6.0	7.9	9.8	12.2	a	54 37.86	55 22 10.0 10.6	I 45.090	4 54 33.00	−16 31 53.98	−16 1013
22	9.4	10.0	12.0	14.0	16.0	18.1	a	55 43.85	55 22 " "	I B 44.200	4 55 38.99	16 28 23.54	16 1020
23	......	38.0	40.0	41.9	43.9	46.2	a	57 12.09	56 52 10.0 10.9	I 46.220	4 57 7.03	18 2 21.72	18 976
24	9.1	22.4	24.6	26.7	28.9	31.1	c	0 26.74	56 38 10.0 11.4	III 45.840	5 0 21.69	17 48 17.31	17 1018
25	8.8	10.2	12.0	14.0	16.0	18.2	a	1 44.08	56 24 10.0 10.4	III 46.320	5 1 39.05	17 34 25.82	17 1021
26	8.0	13.0	14.8	16.7	18.8	20.9	a	2 46.82	56 14 10.0 12.1	I A 40.110	5 2 41.81	17 25 40.02	17 1028
27	8.1	46.7	48.4	50.5	52.4	54.6	a	3 20.50	56 14 " "	III A 38.130	5 3 15.49	17 25 4.15	17 1029
28	9.0	25.9	28.0	30.3	32.4	34.6	c	3 30.24	56 14 " "	V 38.170	5 3 25.23	17 21 52.26	17 1030
29	9.0	8.4	10.6	12.8	14.9	17.2	c	4 12.78	56 14 " "	VI A 45.390	5 4 7.76	17 27 26.36	17 1031
30	9.1	58.7	0.7	3.0	7.3	8.9	c_3 d_2	4 58.65	56 14 " "	VI B 37.910	5 4 53.64	−17 18 34.88	−17 1033
31	8.9	34.8	36.7	38.5	40.6	42.8	a	8 8.68	56 28 10.0 12.1	I B 43.540	5 8 3.62	−17 34 20.59	−17 1046
32	8.9	7.7	9.8	12.0	14.1	16.3	c	8 11.98	56 28 " "	III B 43.790	5 8 6.92	17 34 27.36	17 1047
33	8.7	55.8	57.8	0.0	4.4	6.0	c_3 d_2	8 55.72	56 28 " "	VI A 49.190	5 8 50.64	17 42 42.16	17 1051
34	8.9	11.7	13.3	15.4	17.5	19.6	a	12 45.50	56 22 10.0 12.3	I A 39.675	5 12 40.42	17 33 36.64	17 1072
35	8.3	11.9	13.7	15.7	17.7	20.0	a	13 45.79	56 22 " "	I B 43.780	5 13 40.72	17 28 27.51	17 1078
36	8.9	6.3	8.2	10.0	12.1	14.3	a	14 40.10	55 58 10.0 10.5	I (B) 43.250	5 14 35.08	17 4 15.56	17 1083
37	9.1	49.1	51.3	53.6	55.7	57.9	c	14 53.52	55 58 " "	V A 50.350	5 14 48.48	17 13 3.93	17 1084
38	8.9	25.5	27.7	29.7	32.0	34.3	c	15 29.84	55 58 " "	V A 45.080	5 15 24.80	17 11 23.04	17 1087
39	8.9	20.8	22.7	24.6	26.6	28.9	a	16 54.70	56 16 10.0 11.6	III 42.600	5 16 49.62	17 25 21.43	17 1096
40	9.0	44.5	46.3	48.2	50.2	52.5	a	18 18.32	56 16 " "	I B 42.960	5 18 13.24	−17 22 13.17	−17 1103
41	9.1	41.1	......	44.9	46.9	49.0	a	19 14.80	55 20 10.0 12.2	I 44.480	5 19 9.82	−16 29 53.93	−16 1125
42	9.3	44.2	46.4	48.7	50.9	53.0	c	19 48.64	55 20 " "	III A 42.870	5 19 43.65	16 32 39.73	16 1128
43	8.6	10.4	12.4	14.3	16.2	18.4	a	21 44.04	54 24 10.0 10.0	I 42.930	5 21 39.18	15 33 21.35	15 1035
44	9.2	43.5	45.3	49.4	51.6	53.8	b_2 c_3	21 53.75	54 24 " "	III 40.800	5 21 48.89	15 32 42.51	15 1036
45	9.1	10.1	12.3	14.4	16.6	18.8	c	22 14.44	54 24 " "	V 43.055	5 22 9.57	15 33 27.67	15 1038
46	9.0	44.2	46.5	48.5	50.3	52.3	e	22 18.57	54 24 " "	VII A 42.310	5 22 13.70	15 36 29.36	15 1039
47	8.9	23.0	24.9	26.9	28.8	31.0	a	29 56.87	56 4 10.0 11.0	I 42.265	5 29 51.77	17 13 17.95	17 1173
48	9.0	57.3	59.0	1.0	2.9	5.2	(a)	37 31.04	56 4 " "	I A 40.190	5 37 25.91	17 15 56.11	17 1213
49	9.1	46.4	48.2	50.3	52.3	54.7	a	38 20.43	56 40 10.0 12.6	I 45.270	5 38 15.22	17 50 22.24	17 1216
50	8.9	21.5	23.7	25.9	28.0	30.2	c	38 25.86	56 54 10.0 13.5	III B 48.600	5 38 20.62	−18 2 15.55	−18 1165
51	8.8	7.3	9.7	11.6	13.6	15.6	e	38 41.39	56 54 " "	VII(B)37.950	5 38 36.16	−17 58 54.54	−18 1168
52	9.0	18.5	21.0	22.9	24.7	26.7	e	39 52.57	56 54 " "	V A 42.515	5 39 47.32	18 6 49.45	18 1176
53	8.9	50.9	53.3	55.3	57.0	59.1	e	40 24.93	56 54 " "	VII A 45.020	5 40 19.67	18 7 39.29	18 1177
54	9.1	15.9	17.6	19.7	21.7	24.0	a	48 49.87	56 54 11.0 14.2	I 42.520	5 48 44.60	18 3 36.31	18 1219
55	8.7	49.0	51.0	53.4	55.6	57.8	c	48 53.36	56 36 10.0 13.4	V 48.630	5 48 48.13	17 47 35.42	17 1277
56	8.5	58.8	0.3	4.7	6.8	9.2	b_2 c_3	50 9.05	56 36 " "	III 48.140	5 50 3.81	17 47 24.84	17 1284
57	9.2	38.2	40.6	42.5	44.5	46.5	e	50 12.33	56 36 " "	V B 46.185	5 50 7.10	17 43 35.24	17 1285
58	8.3	23.0	25.0	27.0	29.0	31.2	a	51 56.99	56 6 10.0 12.9	III 41.420	5 51 51.82	17 15 14.77	17 1300
59	9.3	2.3	4.5	6.7	8.8	11.0	c	52 6.66	56 6 " "	V A (38).990	5 52 1.49	17 17 44.37	17 1302
60	9.2	27.6	29.7	31.8	34.0	36.2	c	3 31.86	56 6 10.0 11.9	I 46.140	6 3 26.67	−17 16 48.14	−17 1364
61	9.4	0.0	2.4	4.3	6.3	8.3	e	3 34.20	56 6 " "	VII A 43.915	6 3 29.00	−17 19 25.13	−17 1365
62	7.8	51.9	54.1	56.2	58.4	0.7	c	4 56.26	56 6 " "	III 44.970	6 4 51.07	17 16 28.32	17 1377
63	8.9	31.8	33.8	35.7	37.7	39.9	a	6 5.72	56 6 " "	III B 39.030	6 6 0.54	17 11 20.99	17 1386
64	8.7	29.1	30.9	32.8	34.9	37.1	a	7 2.84	55 38 10.0 12.4	III 44.625	6 6 57.71	16 48 21.37	16 1387
65	9.0	43.1	45.0	46.9	48.9	51.0	a	8 16.86	55 38 " "	I 40.990	6 8 11.73	16 47 10.22	16 1396
66	9.0	36.7	38.8	41.0	43.2	45.4	c	8 41.02	55 38 " "	III A 46.030	6 8 35.88	16 52 3.58	16 1399
67	8.7	23.3	25.3	27.2	29.1	31.4	a	9 57.24	56 18 10.0 11.8	III B 50.060	6 9 52.02	17 26 55.06	17 1407
68	9.2	29.8	31.9	34.0	35.8	37.7	e	10 3.76	56 18 " "	VII B 46.120	6 9 58.54	17 25 42.79	17 1408
69	9.3	59.8	1.9	3.9	6.2	8.6	c	10 4.08	56 18 " "	V B 50.565	6 9 58.86	17 27 6.56	17 1410
70	9.3	43.5	45.7	47.9	50.1	52.3	c	11 47.90	56 18 " "	V A 46.550	6 11 42.67	−17 32 18.55	−17 1420
71	8.6	7.2	9.4	11.6	13.8	15.9	c	12 11.58	56 18 " "	V 44.100	6 12 6.35	−17 28 17.29	−17 1423
72	8.7	22.5	24.8	26.9	28.9	31.1	c	13 26.84	55 32 10.0 12.2	III 46.150	6 13 21.71	16 42 53.12	16 1427
73	8.0	47.3	49.2	51.1	53.0	55.3	a	15 21.17	56 24 10.0 13.6	I B 37.775	6 15 15.94	17 29 0.99	17 1446
74	9.0	22.1	24.2	26.4	28.7	30.8	c	15 26.44	56 24 " "	III 36.750	6 15 21.20	17 31 57.16	17 1447
75	8.9	5.7	8.0	9.9	11.8	13.8	e	15 39.73	56 24 " "	VII A 46.700	6 15 34.48	17 38 25.93	17 1449
76	9.2	56.0	58.3	0.5	2.6	4.8	c	17 0.44	56 24 " "	V B 35.950	6 16 55.21	17 28 30.44	17 1461
77	......	11.8	14.0	16.0	18.0	19.8	e	17 45.98	55 22 10.0 12.1	VII A 36.370	6 17 40.86	16 33 4.50	16 1454
78	9.3	11.2	13.5	15.4	17.2	19.3	e	18 45.29	55 58 10.0 10.7	VIIA(34).720	6 18 40.10	17 8 34.52	17 1468
79	9.1	4.3	6.4	8.3	10.2	12.2	• e	19 38.21	56 12 10.0 11.7	VII A 36.940	6 19 32.99	17 23 18.81	17 1473
80	9.3	17.9	19.6	21.7	23.7	25.9	a	28 51.73	56 12 10.0 12.5	I A 41.550	6 28 46.51	−17 24 46.76	−17 1532
81	9.0	39.6	41.5	43.3	45.3	47.6	a	30 13.42	56 12 " "	I B 38.025	6 30 8.21	−17 17 11.31	−17 1540
82	7.3	0.8	2.7	4.7	6.6	8.9	a	33 34.85	56 58 10.0 12.1	I A 35.900	6 33 29.54	18 9 2.85	18 1492
83	9.0	10.7	12.7	14.6	16.6	18.7	a	34 44.76	56 58 " "	I 35.840	6 34 39.45	18 5 47.66	18 1498
84	9.3	56.2	58.5	0.6	2.7	4.9	c	40 0.58	56 30 10.0 12.0	III A 46.420	6 39 55.32	17 44 27.91	17 1603
85	9.4	34.0	36.1	40.5	42.3	45.0	c_4 d_3	40 31.90	56 30 " "	VI(B) 49.525	6 40 26.65	17 39 1.93	17 1607
86	9.1	33.1	35.5	37.4	39.3	41.4	e	41 7.21	56 30 " "	VII A 45.550	6 41 1.95	17 44 14.89	17 1610
87	9.0	49.0	51.2	53.2	55.0	57.0	e	42 22.97	56 30 " "	VII B 48.640	6 42 17.73	17 38 46.50	17 1620
88	......	41.2	44.0	45.7	49.8	52.0	b_1 c_2	50 54.19	55 50 10.0 11.0	I (A) 48.840	6 50 49.04	−17 5 14.51	−17 1679

Reduction Elements. Zone 89.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
January 14.3....	+0.384	+0.243	+0.496	+0.366	+0.230	+0.496
14.5....	+0.347	+0.217				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 7685		*A* Eridani		53 Eridani		60 Eridani		ξ² Canis Majoris*		γ Canis Majoris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	57 10 11.30		49 22 9.95		53 20 9.75		55 14 10.55		61 42 10.80		54 18 10.95	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.680	5 7.62	41.860	4 32.29	46.060	5 53.75	43.920	5 12.48	35.240	2 26.23	46.130	5 54.88
II Red. to Mer......	.620	1.63	.770	1.70	.020	1.67	.885	1.65	.190	1.57	.100	1.66
VI Inclination	.430		.550		45.820		.685		.000	3 14.28	45.890	
VII Refraction	.375	1 34.7	.555	1 11.3	.830	1 22.2	.630	1 28.1	.010	1 53.6	.845	1 25.4

	29 Canis Majoris		Lalande 14810	
	° ′ ″		° ′ ″	
CIRCLE READING.	63 10 10.25		60 54 10.30	
	r	′ ″	r	′ ″
I Microm. Eq......		6 38.31		4 57.25
II Red. to Mer......		1.56		1.58
VI Inclination	48.270	2.20	42.950	2.20
VII Refraction	.240	2 1.2	43.020	1 50.1

*Bisections with thread A.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 7685......	4 2 12.56	11	+0.96	−17.78	57 16 55.3	55.2
A Eridani	4 9 42.08	11	+0.91	−17.87	49 27 55.2	55.4
53 Eridani	4 33 40.55	11	+0.93	−17.96	53 27 27.4	55.0
60 Eridani	4 45 45.95	11	+0.94	−17.91	55 20 52.8	55.2
ε Ursae Minoris S. P.	4 56 54.97	3	−0.44	[−17.87]	301 10	....
ξ² Canis Majoris.....	6 30 57.80	11	+0.99	−17.86	61 49 46.5	55.1
γ Canis Majoris.....	6 59 19.01	11	+0.94	−17.90	54 25 32.9	55.0
29 Canis Majoris.....	7 14 36.53	11	+1.00	−17.86	63 18 53.5	55.3
Lalande 14810	7 29 52.00	11	+0.98	−17.92	61 1 1.4	55.6

h 4.380	*dt*.	s −17.880
	Hourly rate	− 0.0019
	Adopted Equator Point	° ′ ″ 38 56 55.22

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 0	29.825	24.5	24.3
4 57	29.825	24.8	24.6
5 55	29.825	24.7	24.7
6 55	29.815	23.6	23.3
7 30	29.815	22.9	22.5

Note.

84, 88. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A*=α to 1900.0				*D*=Z. D. S. to 1895.0			
			54°	55°	56°	57°	54°	55°	56°	57°
°	s	h m	s	s	s	s	″	″	″	″
54	+0.935	4 0	......	+12.519	+12.400	+12.280	......	+0.83	+0.58	+0.32
55	0.941	4 30	......	12.290	12.165	12.039	......	1.61	1.38	1.16
56	0.948	5 0	+12.237	12.110	11.980	11.849	+2.47	2.28	2.09	1.90
57	+0.954	5 30	12.110	11.980	11.849	11.716	3.03	2.87	2.72	2.57
		6 0	+12.033	11.905	11.773	11.639	+3.47	3.36	3.24	3.13
		6 30	......	11.882	11.753	11.622	......	3.73	3.66	3.59
		7 0	......	+11.915	+11.790	+11.663	......	+3.98	+3.95	+3.93

APPARENT RIGHT ASCENSION.	*R*			
	54° 30′	55° 30′	56° 30′	57° 30′
h m	″	″	″	″
4 0	85.47	88.69	92.06	95.64
4 30	85.45	88.67	92.04	95.61
5 0	85.43	88.65	92.02	95.59
5 30	85.41	88.63	92.00	95.57
6 0	85.43	88.65	92.02	95.59
6 30	85.53	88.75	92.12	95.70
7 0	85.64	88.87	92.25	95.82

1895 JANUARY 16. ZONE 90. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.0	44.5	46.0	50.2	52.4	54.6	$b_2 c_3$	3 54.62	56 22 10.0 10.6	III 43.485	4 3 49.36	−17 31 3.29	−17 799
2	8.4	30.3	32.5	34.8	36.9	39.0	c	4 34.70	55 2 10.0 11.4	V B 48.130	4 4 29.59	16 9 17.04	16 791
3	9.4	20.0	22.1	24.3	26.5	28.7	c	5 24.32	55 38 10.0 9.0	V 45.475	4 5 19.12	16 47 40.83	16 797
4	8.7	14.1	16.5	18.4	20.3	22.3	e	5 48.44	55 2 10.0 10.3	V B 46.660	4 5 43.32	16 8 48.77	16 799
5	9.3	46.1	48.5	50.4	52.2	54.3	e	6 20.42	55 2 " "	VII 42.100	4 6 15.29	16 10 36.88	16 804
6	8.0	23.3	25.6	27.5	29.4	31.4	e	6 57.55	55 2 " "	V A 41.590	4 6 52.41	16 13 40.19	16 807
7	8.0	9.0	10.8	12.8	14.6	16.9	a	15 42.68	55 30 10.0 9.4	I 48.425	4 15 37.41	16 40 37.79	16 838
8	9.1	41.4	43.2	45.2	47.0	49.2	a	16 15.05	55 30 " "	III B 43.260	4 16 9.79	16 35 47.02	16 840
9	9.3	10.8	12.6	14.6	16.6	18.9	a	34 44.50	55 4 10.0 10.4	III A 42.100	4 34 39.14	16 16 0.11	16 912
10	9.0	53.5	55.6	57.7	59.9	2.1	c	34 57.76	55 4 " "	III B 45.820	4 34 52.40	−16 10 43.31	−16 913
11	9.3	36.0	37.8	39.7	41.6	43.8	a	36 9.58	55 4 " "	I (A) 40.610	4 36 4.20	−16 15 30.23	−16 921
12	8.6	15.0	16.8	18.8	20.7	22.9	a	55 48.61	54 54 10.0 9.0	I 43.100	4 55 43.12	16 3 10.87	16 1022
13	9.4	30.7	32.6	34.5	36.6	38.8	a	1 4.40	54 50 10.0 10.0	I A 39.180	5 0 58.89	16 1 12.79	16 1038
14	9.1	29.1	30.9	32.9	34.9	37.0	a	2 2.71	54 50 " "	I 37.675	5 1 57.20	15 57 29.83	16 1042
15	9.3	7.7	9.8	11.9	14.3	16.4	c	2 12.02	54 50 " "	III B 39.670	5 2 6.50	15 54 56.30	15 947
16	9.3	26.8	28.1	32.4	34.5	36.7	$b_2 c_3$	4 36.75	55 0 10.0 10.1	III 41.720	5 4 31.21	16 8 51.05	16 1053
17	9.3	1.9	3.7	5.7	7.6	9.9	a	5 35.55	55 0 " "	....	5 5 29.99	16 13 26	16 1056
18	9.0	32.2	34.3	36.5	38.6	40.8	c	5 36.48	55 0 " "	....	5 5 30.94	16 6 6	16 1057
19	9.0	4.6	6.7	8.0	11.1	13.2	c	6 8.90	55 0 " "	....	5 6 3.35	16 6 44	16 1060
20	......	44.4	46.8	48.5	50.3	52.4	e	6 18.62	55 0 " "	VII B 38.480	5 6 13.08	−16 4 39.13	−16 1062
21	.....	31.9	34.0	36.3	40.6	42.1	$c_3 d_2$	8 31.93	55 8 10.0 10.6	V A (39).370	5 8 26.34	−16 19 24.54	−16 1072
22	9.4	37.3	39.3	41.5	43.7	45.8	c	9 41.52	55 8 " "	III B 44.730	5 9 35.94	16 14 37.95	16 1079
23	9.7	43.7	45.8	48.0	50.1	52.3	c	10 47.98	54 48 10.0 9.6	V 46.630	5 10 42.43	15 58 29.00	16 1082
24	9.4	1.7	3.7	5.6	7.5	9.9	a	13 35.49	55 12 10.0 10.0	I 44.910	5 13 29.87	16 21 54.90	16 1093
25	9.2	37.3	39.4	41.6	43.7	46.0	c	13 41.60	55 12 " "	III B 44.910	5 13 35.99	16 18 43.08	16 1095
26	8.1	18.6	20.4	22.4	24.3	26.6	a	16 52.11	54 4 10.0 10.0	I 48.480	5 16 46.60	15 15 1.61	15 1018
27	9.7	54.4	56.1	58.3	0.3	2.4	a	17 28.19	55 42 10.0 11.2	III 45.925	5 17 22.48	16 52 20.21	16 1115
28	8.8	33.8	35.8	40.4	41.8	44.5	$c_4 d_3$	17 31.67	54 24 10.0 9.6	VI 45.090	5 17 26.12	15 34 2.12	15 1020
29	8.9	50.3	52.2	54.2	56.0	58.3	a	19 23.84	54 2 10.0 10.8	III 43.480	5 19 18.33	15 11 29.02	15 1026
30	9.3	50.0	52.4	54.2	56.0	58.0	e	19 24.33	54 24 10.0 10.1	V 43.480	5 19 18.77	−15 33 31.48	−15 1027
31	8.8	28.8	30.5	32.5	34.3	36.5	a	21 2.03	53 8 10.0 8.8	III B 38.350	5 20 56.63	−14 12 34.00	−14 1126
32	9.2	54.6	56.5	58.4	0.3	2.6	a	22 28.01	53 8 " "	I A 49.880	5 22 22.58	14 22 42.30	14 1134
33	8.6	30.7	33.0	35.0	37.2	39.3	c	22 35.04	55 14 10.0 9.7	V 47.915	5 22 29.37	16 25 0.30	16 1146
34	8.6	45.6	47.5	49.5	51.3	53.6	a	25 19.26	54 50 10.0 10.2	I 42.760	5 25 13.63	15 59 17.92	16 1152
35	9.3	27.1	29.0	31.0	32.9	35.1	a	26 0.78	54 50 " "	I A 40.890	5 25 55.15	16 1 56.87	16 1156
36	8.5	23.5	25.7	27.8	29.9	32.3	c	26 27.84	54 42 10.0 10.7	V 47.225	5 26 22.21	15 52 47.69	15 1063
37	9.3	25.4	27.9	29.8	31.6	33.7	e	26 59.67	55 52 10.0 10.6	VII 46.240	5 26 53.90	17 2 34.07	17 1158
38	8.7	45.7	47.6	49.6	51.5	53.7	a	36 19.40	55 0	....	5 36 13.70	16 11 31	16 1202
39	8.9	32.2	33.8	38.0	40.2	42.5	$b_2 c_3$	40 42.38	54 48 10.0 8.9	III A 45.160	5 40 36.68	16 1 26.59	16 1227
40	9.3	30.4	32.8	34.7	36.4	38.5	e	41 4.71	54 48 " "	VII 46.150	5 40 59.02	−15 58 34.63	−16 1229
41	8.6	49.4	51.5	53.2	55.2	57.5	a	41 23.12	54 48 " "	III 47.875	5 41 17.42	−15 59 4.55	−16 1232
42	8.1	18.6	21.0	22.7	24.6	26.6	e	41 52.85	54 48 " "	VII 49.030	5 41 47.16	15 59 30.24	16 1235
43	8.6	11.9	14.3	16.3	18.0	20.0	e	42 46.18	55 16 10.0 9.5	V 46.340	5 42 40.42	16 26 39.17	16 1245
44	9.1	47.2	49.1	51.0	53.1	55.4	a	46 21.10	55 56 10.0 9.7	I A 44.940	5 46 15.24	17 9 26.91	17 1263
45	8.9	6.3	8.3	10.2	12.1	14.4	a	47 40.18	55 56 " "	I B 42.450	5 47 34.33	17 2 11.37	17 1269
46	9.0	28.0	29.7	31.7	33.7	35.9	a	49 1.61	55 8 10.0 10.6	I 47.260	5 48 55.85	16 18 56.08	16 1291
47	8.1	4.3	6.4	8.6	10.8	12.9	c	49 8.60	55 8 " "	III B 51.220	5 49 2.85	16 17 0.26	16 1292
48	9.4	40.5	42.4	44.3	46.1	48.4	a	53 14.27	55 58 10.0 10.7	I 43.180	5 53 8.40	17 7 42.34	17 1309
49	9.0	36.3	38.2	40.2	42.1	44.4	a	4 10.21	56 10 10.0 11.1	I 41.690	6 4 4.29	17 19 19.52	17 1371
50	9.0	11.9	13.7	15.7	17.5	19.7	a	5 45.25	53 22 10.0 9.0	I 43.540	6 5 39.66	−14 31 46.32	−14 1353
51	8.5	25.0	26.9	28.8	30.7	33.0	a	6 58.72	55 24 10.0 8.9	I 44.140	6 6 52.89	−16 34 4.28	−16 1386
52	8.6	14.9	16.6	20.8	22.9	25.0	$b_2 c_3$	7 25.05	53 16 10.0 8.0	III 43.750	6 7 19.47	14 25 52.24	14 1359
53	8.7	38.9	41.2	43.0	45.0	46.8	e	8 13.12	54 48 10.0 9.4	V A 46.190	6 8 7.35	16 2 0.74	16 1395
54	9.1	4.7	7.1	8.9	10.8	12.9	e	8 39.04	54 48 " "	VII B 47.250	6 8 33.28	15 55 54.60	15 1309
55	8.7	53.3	55.0	57.0	59.0	1.1	a	10 26.90	55 12 10.0 9.3	III 48.420	6 10 21.08	16 23 29.55	16 1409
56	9.0	51.0	52.6	56.9	59.0	1.1	$b_2 c_3$	11 1.16	54 36 10.0 8.3	III 43.600	6 10 55.41	15 45 54.99	15 1320
57	8.2	30.7	32.9	35.0	37.3	39.5	c	11 35.08	55 50 10.0 11.6	V 42.765	6 11 29.18	16 59 46.42	16 1413
58	9.4	5.5	7.8	9.8	11.7	13.7	e	11 39.69	55 50 " "	VII A 48.380	6 11 33.77	17 4 50.16	17 1418
59	9.0	0.1	2.4	4.4	6.7	8.7	c	13 4.46	55 50 " "	V B 46.850	6 12 58.56	16 57 51.67	16 1424
60	8.9	49.3	51.4	53.5	55.8	57.9	c	13 53.58	54 36 10.0 11.0	V 44.380	6 13 47.82	−15 46 14.36	−15 1337
61	9.2	1.6	3.8	5.8	7.7	9.7	e	18 36.03	53 40 10.0 9.4	VII 46.840	6 18 30.38	−14 51 1.76	−14 1422
62	9.0	25.7	27.4	29.4	31.2	33.5	a	21 58.93	52 56 10.0 9.1	I 44.600	6 21 53.37	14 6 12.77	14 1446
63	9.1	3.1	4.8	6.7	8.7	11.0	a	22 36.42	53 26 10.0 8.8	III 48.230	6 22 30.79	14 37 25.93	14 1453
64	8.7	57.2	59.0	1.0	2.9	5.1	a	26 30.65	53 48 10.0 10.7	I 41.870	6 26 24.99	14 57 25.64	14 1479
65	9.3	0.3	2.2	4.0	5.8	8.0	a	30 33.53	52 46 10.0 8.9	I 42 740	6 30 27.98	13 55 40.32	13 1553
66	9.1	40.9	42.7	44.7	46.6	48.8	a	31 14.21	52 46 " "	I B 41.200	6 31 8.66	13 51 57.28	13 1559
67	......	7.7	9.3	11.4	13.3	15.6	a	32 40.96	53 0 10.0 9.8	I 44.950	6 32 35.37	−14 10 24.77	−14 1511

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
68	8.3	3.4	5.2	7.2	9.1	11.4	a	34 36.80	53 18 10.0 9.1	I 43.200	6 34 31.18	−14 27 52.54	−14 1524
69	8.8	26.5	28.0	32.2	34.2	36.7	$b_2\ c_3$	40 36.58	55 36 10.0 9.6	III B 39.300	6 40 30.70	16 41 35.60	16 1589
70	9.2	4.0	5.7	9.7	12.0	14.0	$b_2\ c_3$	41 14.15	55 36 “ “	III 46.250	6 41 8.26	−16 47 3.08	−16 1593
71	9.0	43.1	45.4	47.3	49.1	51.1	e	41 17.22	55 36 “ “	V A 42.180	6 41 11.32	−16 49 1.19	−16 1594
72	9.1	20.7	23.1	25.1	26.9	29.0	e	41 54.98	55 36 “ “	V A 44.290	6 41 49.08	16 49 41.94	16 1596
73	9.1	0.4	2.2	4.2	5.9	8.4	a	50 34.14	55 50 10.0 10.8	I A 45.550	6 50 28.21	17 4 7.66	17 1675
74	.....	12.7	14.5	16.6	18.4	20.7	a	51 46.48	55 50 “ “	I B 38.730	6 51 40.57	16 55 28.93	16 1661
75	9.1	45.4	47.0	51.2	53.4	55.6	$b_2\ c_3$	51 55.59	55 50 “ “	III A 45.790	6 51 49.66	17 4 14.79	17 1689
76	9.0	29.6	31.7	33.8	35.9	38.2	c	52 33.84	55 50 “ “	V B 42.750	6 52 27.93	16 56 50.15	16 1669
77	8.1	7.5	9.5	11.4	13.5	15.6	a	52 41.40	55 50 “ “	III (B) 46.480	6 52 35.49	16 58 0.06	16 1671
78	9.1	6.7	8.6	12.9	14.5	17.3	$c_4\ d_3$	53 4.35	55 50 “ “	VI B 45.530	6 52 58.44	16 57 44.55	16 1674
79	8.9	0.8	2.5	6.7	8.9	11.0	$b_2\ c_3$	54 11.05	55 50 “ “	III 44.440	6 54 5.13	17 0 35.36	16 1686
80	9.3	30.5	32.4	34.3	36.3	38.6	a	55 4.32	55 50 “ “	III B 41.800	6 54 58.42	−16 56 31.26	−16 1692
81	8.9	32.7	34.9	37.2	39.4	41.5	c	55 37.14	55 22 10.0 11.5	V 42.775	6 55 31.29	−16 32 4.66	−16 1698
82	8.7	42.7	44.6	46.7	48.6	50.6	a	58 16.53	55 40 10.0 10.6	I 43.775	6 58 10.64	16 50 21.78	16 1720
83	9.1	18.9	20.6	22.5	24.5	26.7	a	58 52.48	55 24 10.0 9.7	III 42.780	6 58 46.63	16 34 3.60	16 1729
84	9.5	35.9	38.1	40.1	42.0	44.0	e	59 10.08	55 24 “ “	V A 42.805	6 59 4.22	16 37 20.39	16 1732
85	9.1	20.6	22.2	26.6	28.7	30.8	$b_2\ c_3$	0 30.85	55 48 10.0 10.0	III B 39.890	7 0 24.96	16 53 56.43	16 1744
86	9.2	40.7	43.3	45.2	47.0	49.1	e	1 15.07	55 48 “ “	V 37.650	7 1 9.18	16 56 29.37	16 1754
87	9.1	7.6	9.8	11.9	14.0	16.4	c	3 11.94	55 48 “ “	V 45.230	7 3 6.05	16 58 55.68	16 1781
88	8.8	36.7	38.6	40.5	42.5	44.7	a	6 10.54	55 58 10.0 10.0	I 45.785	7 6 4.64	17 9 4.43	17 1821
89	9.3	45.8	47.8	49.5	51.5	53.8	a	7 19.18	53 0 10.0 10.1	I 48.715	7 7 13.60	14 11 52.18	14 1761
90	9.5	55.0	56.8	58.8	0.6	2.8	a	8 28.34	53 12 10.0 9.1	I A 45.800	7 8 22.74	−14 26 11.35	−14 1772
91	9.3	25.6	27.7	29.7	31.9	34.3	c	8 29.84	53 12 “ “	V (A) 48.460	7 8 24.23	−14 27 5.97	−14 1773
92	7.9	6.5	8.4	10.3	12.3	14.5	[illegible]	10 39.94	53 12 “ “	I A 45.590	7 10 34.34	14 26 8.22	14 1790
93 +	8.9	48.8	50.8	52.5	54.5	56.6	a	11 22.16	53 12 “ “	I B 44.560	7 11 16.58	14 19 20.41	14 1795
94	8.0	3.5	5.4	7.1	9.2	11.5	a	11 36.86	53 12 “ “	III B 46.610	7 11 31.27	14 20 1.78	14 1797
95	9.2	31.7	33.6	35.6	37.6	40.0	a	14 5.61	55 50 10.0 10.9	I 43.780	7 13 59.73	17 0 29.33	16 1885
96	8.0	7.1	9.0	10.9	12.9	15.1	a	14 40.91	55 50 “ “	I 47.610	7 14 35 03	17 1 43.09	16 1892
97	7.9	52.3	54.4	56.6	58.9	1.0	c	14 56.64	56 8 10.0 10.9	III 49.820	7 14 50.73	17 20 28.56	17 1917
98	8.8	45.5	47.2	49.2	51.2	53.5	a	18 19.30	56 16 10.0 10.4	I 42.840	7 18 13.39	17 26 7.35	17 1941
99	9.0	8.9	10.7	12.5	14.5	16.7	a	24 42.25	53 40 10.0 9.0	I 41.565	7 24 36.64	14 49 43.61	14 1923
100	8.9	59.1	0.7	5.0	7.0	9.3	$b_2\ c_3$	25 9.26	54 54 10.0 10.5	III 42.535	7 25 3.53	−16 4 8.83	−15 1856
101	8.2	43.2	45.3	47.5	49.5	51.8	c	25 47.46	55 48 10.0 10.9	....	7 25 41.63	−16 51 37	−16 1978
102	9.0	42.9	45.2	47.1	49.0	51.0	e	26 17.05	55 48 “ “	VII B 37.545	7 26 11.21	16 53 26.06	16 1986
103	......	39.4	......	43.5	45.4	47.5	(e)	27 13.50	55 48 “ “	VII 43.770	7 27 7.66	16 58 39.79	16 1994
104	9.5	7.2	8.9	11.0	12.9	15.0	a	32 40.81	55 4 10.0 9.5	I A 48.250	7 32 35.06	16 19 14.20	16 2047
105	9.4	29.8	31.7	33.6	35.6	37.9	a	33 3.51	55 4 “ “	I 46.520	7 32 57.77	16 15 26.62	16 2050
106	8.7	8.9	11.0	13.0	15.1	17.5	c	33 13.10	55 4 “ “	III B 44.140	7 33 7.37	16 11 29.10	16 2052
107	9.3	18.6	20.4	22.4	24.4	26.7	a	34 52.56	56 42 10.0 11.2	III 48.170	7 34 46.65	17 54 7.21	17 2077
108	8.5	7.3	9.3	11.2	13.1	15.3	a	35 41.19	56 2 10.0 9.9	III 48.415	7 35 35.36	17 14 9.31	17 2089
109	9.3	13.7	15.5	17.4	19.4	21.5	a	36 47.56	56 46 10.0 11.8	I B 44.565	7 36 41.65	17 53 43.51	17 2098
110	8.8	11.9	13.8	15.7	17.6	20.0	a	37 45.87	56 46 “ “	I 49.060	7 37 39.96	−17 58 24.03	−17 2106
111	9.6	25.3	26.8	28.9	30.8	33.2	a	37 59.08	56 46 “ “	III A 48.685	7 37 53.16	−18 1 33.38	−17 2108
112	9.0	18.9	20.7	22.8	24.7	27.0	a	38 52.73	55 50 10.0 10.7	III 48.825	7 38 46.92	17 2 18.24	16 2097
113	8.9	30.8	32.3	36.7	38.7	40.9	$b_2\ c_3$	39 40.94	55 30 10.0 9.9	III 46.660	7 39 35.18	16 41 35.50	16 2101
114	9.0	58.0	0.0	1.8	3.9	6.2	a	40 31.84	55 30 “ “	III B 50.790	7 40 26.08	16 39 41.27	16 2107
115	9.0	50.9	53.2	55.1	57.3	59.6	c	40 55.22	56 36 10.0 11.8	V 46.280	7 40 49.34	17 47 35.10	17 2137
116	9.0	22.0	24.4	26.3	28.1	30.0	e	40 56.00	56 48 10.0 11.2	VII 44.120	7 40 50.10	17 58 55.58	17 2138
117	9.2	39.0	41.3	43.2	45.1	47.0	e	42 13.13	55 44 10.0 11.6	VII 42.840	7 42 7.36	16 54 28.15	16 2122
118	8.9	45.7	48.0	50.1	52.4	54.5	c	54 50.14	55 22 10.0 10.6	V 48.970	7 54 44.45	16 34 27.48	16 2226
119	9.1	3.6	5.7	7.8	9.9	12.3	c	58 7.86	53 58 10.0 9.6	III 47.575	7 58 2.33	15 9 55.29	15 2211
120	9.1	36.3	38.0	40.0	41.9	44.3	a	0 9.94	55 22 10.0 11.0	I 46.585	8 0 4.28	−16 33 40.21	−16 2274
121	9.1	30.4	32.5	34.6	36.9	39.0	c	0 34.68	56 18 10.0 11.0	III 47.880	8 0 28.93	−17 30 10.32	−17 2317
122	9.3	47.1	48.8	50.8	52 9	55.2	a	2 20.96	56 18 “ “	I A 47.080	8 2 15.22	17 33 8.21	17 2333
123	9.0	9.4	11.3	13.2	15.0	17.4	a	5 43.00	54 44 10.0 9.0	I 46.120	8 5 37.42	15 55 30.32	15 2292
124	9.2	47.2	49.2	51.0	52.9	55.1	a	6 20.88	55 6 10.0 11.1	I 44.130	8 6 15.28	16 16 54.59	16 2331
125	9.1	5.7	7.5	9.5	11.4	13.8	a	6 39.38	55 6 “ “	III 47.310	8 6 33.78	16 17 57.69	16 2334
126	9.5	12.2	13.8	18.1	20.2	22.3	$b_2\ c_3$	7 22.35	54 28 10.0 9.9	III 45.560	8 7 16.81	15 39 21.76	15 2308
127	9.3	1.2	2.8	7.1	9.2	11.3	$b_2\ c_3$	8 11.34	53 54 10.0 9.7	III 47.160	8 8 5.86	−15 5 50.91	−14 2418

Reduction Elements. Zone 90.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
January 16.3....	+0.475	+0.210	+0.573	+0.456	+0.192	+0.606
16.5....	+0.436	+0.175	+0.638			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		Lalande 7685		*A* Eridani		53 Eridani		60 Eridani		9 Navis		*e* Navis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		57 10 10.55		49 22 9.65		53 20 8.55		55 14 10.15		52 26 10.00		61 26 10.10	
		r	′ ″	r	′ ″	r	′	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq. .	43.925	5 11.71	41.970	4 35.27	46.280	6 0.04	44.120	5 16.29	48.195	6 33.79	42.790	4 51.02
II	Red. to Mer. . . .	.835	1.63	.910	1.70	.240	1.67	.080	1.65	.100	1.68	.750	1.58
VI	Inclination	.640		.775			—2.20	43.905		47.920		.570	
VII	Refraction	.560	1 32.5	.700	1 9.6		1 20.3	.805	1 26.0	.865	1 17.9	.535	1 49.8

		ι Navis		20 Navis	
		° ′ ″		° ′ ″	
CIRCLE READING.		62 50 9.75		54 18 9.50	
		r	′ ″	r	′ ″
I	Microm. Eq.	42.750	4 49.83		5 35.50
II	Red. to Mer.	.710	1.56		1.66
VI	Inclination	.490		44.980	2.20
VII	Refraction	.440	1 56.5	.980	1,23.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 7685.	4 2 13.25	11	+1.13	—18.67	57 16 56.4	56.0
A Eridani.	4 9 42.81	11	+1.06	—18.77	49 27 56.2	56.2
53 Eridani.	4 33 41.18	11	+1.09	—18.76	53 27 28.4	55.7
60 Eridani.	4 45 46.56	11	+1.11	—18.71	55 20 54.1	56.2
ε Ursae Minoris S. P.	4 56 55.95	8	—0.27	[—18.87]	301 10	. . . .
λ Ursae Minoris S. P.	7 26 54.90	4	—5.36	[—17.46]	307 54	. . . .
9 Navis.	7 47 13.87	11	+1.08	—18.80	52 34 3.4	56.3
e Navis.	7 52 39.91	11	+1.17	—18.86	61 32 52.5	56.3
ι Navis.	8 3 23.54	11	+1.19	—18.85	62 56 57.6	55.2
20 Navis.	8 8 49.71	11	+1.10	—18.86	54 25 12.3	56.6

h 4.380. . . . . *dt* . . . . s —18.728

Hourly rate . . . . — 0.0318

Adopted Equator Point . . . . 38° 56′ 56.″06

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 0	29.715	33.8	33.7
5 0	29.725	33.1	34.1
6 0	29.725	33.2	33.9
7 15	29.725	32.6	33.0
8 10	29.725	31.9	32.5

Note.

67. Close double, mean observed. Magnitudes 9.1, 9.1.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0					
			52°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	s
52	+1.079	4 0	. . . . . .	. . . . . .	. . . . . .	+12.545	+12.427	+12.308
53	1.088	4 30	. . . . . .	. . . . . .	+12.437	12.314	12.189	12.063
54	1.097	5 0	. . . . . .	+12.382	12.257	12.130	12.001	11.870
55	1.106	5 30	. . . . . .	12.253	12.125	11.996	11.864	11.731
56	1.114	6 0	. . . . . .	12.172	12.043	11.914	11.784	11.650
57	+1.124	6 30	+12.264	12.139	12.016	11.886	11.758	11.628
		7 0	+12.277	12.157	12.037	11.914	11.789	11.663
		7 30	. . . . . .	+12.226	12.111	11.994	11.876	11.756
		8 0	. . . . . .	. . . . . .	12.235	12.128	12.018	11.905
		8 30	. . . . . .	. . . . . .	+12.409	+12.311	+12.211	+12.111

APPARENT RIGHT ASCENSION.	*D* = Z. D. S. to 1895.0						*R*					
	52°	53°	54°	55°	56°	57°	52°	53°	54°	55°	56°	57°
h m	″	″	″	″	″	″	″	″	″	″	″	″
4 0	. . . .	. . . .	. . . .	+0.56	+0.30	+0.04	. . . . .	79.05	81.98	85.04	88.27	91.63
4 30	. . . .	. . . .	+1.53	1.29	1.06	0.83	. . . . .	79.03	81.96	85.02	88.25	91.60
5 0	. . . .	+2.36	2.16	1.96	1.76	1.58	. . . . .	79.01	81.94	85.00	88.23	91.58
5 30	. . .	2.85	2.68	2.52	2.36	2.19	. . . . .	79.03	81.96	85.02	88.25	91.60
6 0	. . . .	3.23	3.11	2.98	2.86	2.74	. . . . .	79.03	81.96	85.02	88.25	91.60
6 30	+3.58	3.50	3.41	3.33	3.25	3.16	76.28	79.08	82.01	88.07	88.31	91.67
7 0	+3.69	3.65	3.60	3.56	3.51	3.48	76.33	79.14	82.07	85.13	88.37	91.73
7 30	. . . .	+3.66	3.66	3.67	3.68	3.67	. . . . .	. . . . .	82.11	85.19	88.43	91.82
8 0	. . . .	. . . .	3.60	3.65	3.69	3.75	. . . . .	. . . . .	82.17	85.25	88.50	91.88
8 30	. . .	. . . .	+3.42	+3.51	+3.60	+3.70	. . . . .	. . . . .	82.22	85.31	88.56	91.93

1895 JANUARY 19. ZONE 91. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	9.2	30.7	32.6	34.4	36.3	38.7	a	2 4.44	55 48	9.6	9.0	I	41.790	5 1 57.76	−16 56 52.95	−17 1022^1
2	9.3	0.3	2.4	4.6	6.7	9.0	c	2 4.60	55 48	"	"	III	43.160	5 1 57.92	16 57 21.20	17 1022^2
3	9.0	2.8	4.7	6.7	8.6	10.9	a	5 36.53	55 0	10.0	9.1	I A	45.960	5 5 29.92	16 13 26.89	16 1056
4	8.9	33.3	35.2	37.5	39.6	41.8	c	5 37.48	55 0	"	"	III B	43.140	5 5 30.88	16 6 6.36	16 1057
5	9.0	5.6	7.7	9.9	12.0	14.3	c	6 9.90	55 0	"	"	III B	45.080	5 6 3.30	16 6 43.85	16 1060
6	9.1	7.0	8.9	10.8	12.9	15.0	a	9 40.80	55 36	10.0	9.0	I	46.510	5 9 34.09	16 46 26.54	16 1078
7	8.1	38.0	40.3	42.4	44.6	46.8	c	9 42.42	55 36	"	"	III	47.795	5 9 35.71	16 46 53.15	16 1080
8	9.4	50.0	52.0	54.2	56.3	58.4	c	13 54.18	55 26	9.3	8.5	III	47.345	5 13 47.48	16 36 45.27	16 1097
9	9.4	29.6	31.5	33.4	35.3	37.5	a	20 3.22	54 50	9.5	8.1	I B	50.200	5 19 56.57	15 58 25.13	16 1130
10	9.3	9.4	11.3	13.2	15.2	17.4	a	20 43.05	54 50	"	"	I B	43.510	5 20 36.40	−15 56 17.04	−15 1033
11	8.7	44.6	46.5	48.4	50.3	52.6	a	21 18.25	54 50	"	"	I A	43.715	5 21 11.58	−16 2 49.60	−16 1139
12	9.4	2.3	4.2	6.2	8.1	10.2	a	21 35.96	54 50	"	"	III	42.110	5 21 29.30	15 59 6.33	16 1140
13	9.0	56.1	57.9	59.9	1.9	4.1	a	23 29.58	53 42	8.8	6.5	I	43.870	5 23 23.05	14 51 34.58	14 1141^1
14	9.1	26.6	28.7	30.9	33.0	35.3	c	23 30.90	53 42	"	"	III	43.695	5 23 24.37	14 51 33.19	14 1141^2
15	8.1	10.8	12.6	14.5	16.5	18.8	a	27 44.35	54 28	9.5	8.2	I	46.525	5 27 37.70	15 38 30.83	15 1072
16	9.0	31.0	32.9	34.8	36.8	38.9	a	28 4.58	54 28	"	"	III B	42.180	5 27 57.94	15 33 55.73	15 1076
17	7.3	17.9	20.0	22.2	24.4	28.6	c_2 d_1	28 20.04	55 12	9.4	8.2	V	49.320	5 28 13.30	16 23 30.64	16 1168
18	9.3	18.3	20.5	22.6	24.8	27.0	c	37 22.64	55 0	9.0	7.8	III	47.690	5 37 15.90	16 11 0.67	16 1209
19	9.4	48.9	51.1	53.3	55.4	57.5	c	37 53.24	55 0	"	"	V A	42.410	5 37 46.50	16 12 35.75	16 1213
20	8.6	58.0	59.9	1.8	3.9	5.9	a	40 31.86	56 8	10.0	8.5	I	43.170	5 40 24.98	−17 17 37.79	−17 1231
21	8.8	11.4	13.5	15.7	17.9	20.2	c	41 15.74	53 38	9.2	5.7	III	47.280	5 41 9.16	−14 48 49.59	−14 1228
22	......	27.7	29.9	32.0	34.1	36.3	c	42 32.00	53 38	"	"	III A	45.640	5 42 25.41	14 51 33.13	14 1232
23	9.0	53.0	54.8	56.8	58.8	1.0	■	48 26.74	55 30	10.0	8.0	I	46.925	5 48 19.91	16 40 51.19	16 1288
24	9.1	9.7	11.4	13.4	15.4	17.7	a	48 43.39	55 30	"	"	I A	47.410	5 48 36.55	16 44 15.17	16 1289
25	8.8	2.2	4.4	6.5	8.8	11.0	c	49 6.58	56 6	9.2	8.5	III	47.790	5 48 59.67	17 17 11.81	17 1278
26	9.2	56.2	58.1	0.1	2.0	4.3	a	8 30.09	56 2	9.5	7.8	I	46.290	6 8 23.15	17 12 49.49	17 1399
27	8.9	32.6	34.7	36.7	38.9	41.0	c	8 36.78	54 2	10.0	7.0	V	42.300	6 8 30.08	15 11 30.35	15 1308
28	9.0	57.0	58.8	0.8	2.7	5.0	a	11 30.39	53 16	10.0	7.2	I B	47.360	6 11 23.79	14 23 49.12	14 1379
29	8.9	15.9	17.8	19.6	21.6	23.8	a	12 49.28	53 16	"	"	I	49.150	6 12 42.67	14 27 37.88	14 1387
30	9.3	1.2	3.1	5.0	6.8	9.0	a	13 34.52	53 0	10.0	7.0	I	46.150	6 13 27.93	−14 10 39.80	−14 1393
31	9.0	28.0	29.9	31.8	33.7	36.0	a	15 1.39	53 8	10.0	6.8	I	43.110	6 14 54.80	−14 17 42.39	−14 1402
32	8.7	48.0	49.8	51.8	53.7	56.0	a	16 21.59	54 42	10.0	8.0	I	42.810	6 16 14.81	15 51 42.37	15 1353
33	9.1	29.1	31.2	33.4	35.7	37.7	c	16 33.42	56(46)	10.0	9.0	V	45.450	6 16 26.38	17 56 44.04	17 1455
34	8.2	13.7	16.1	17.8	19.7	21.8	e	16 48.21	53 10	9.5	6.6	VII B	39.890	6 16 41.62	14 15 32.55	14 1412
35	8.7	39.1	41.3	43.4	45.3	47.1	e	17 13.62	53 10	"	"	VII A	37.260	6 17 7.02	14 21 10.47	14 1415
36	8.9	43.3	45.7	47.5	49.4	51.4	e	18 17.72	54 6	10.0	7.5	VII	41.185	6 18 11.00	15 15 15.32	15 1363
37	7.4	46.9	49.1	50.9	52.7	54.9	e	19 21.19	53 50	10.0	7.8	VII	47.130	6 19 14.50	15 1 9.24	14 1428
38	8.5	12.5	14.2	16.2	18.2	20.4	a	41 46.11	55 12	10.0	8.5	I	44.725	6 41 39.25	16 22 32.28	16 1595
39	8.7	50.7	52.7	54.5	56.6	58.7	a	42 24.64	56 24	10.0	9.5	III	43.870	6 42 17.64	17 34 22.50	17 1619
40	9.0	8.3	10.0	12.0	13.9	16.1	a	50 41.87	55 10	10.0	8.1	I	49.480	6 50 35.02	−16 22 7.14	−16 1653
41	8.9	45.8	47.5	51.8	54.0	56.1	b_2 c_3	50 56.04	53 12	10.0	6.3	III B	51.510	6 50 49 42	−14 21 27.46	−14 1640
42	9.1	16.5	18.7	20.6	22.9	25.0	c	51 20.74	53 12	"	"	III B	49.140	6 51 14.12	14 20 42.15	14 1644
43	8.6	1.8	3.4	7.8	9.7	12.2	b_2 c_3	52 12.03	55 12	10.0	8.2	III	43.980	6 52 5.18	16 22 24.34	16 1666
44	9.0	39.1	41.2	43.3	45.5	47.8	c	52 43.38	55 12	"	"	V B	48.630	6 52 36.53	16 20 41.75	16 1672
45	9.1	37.0	39.5	41.3	43.3	45.2	e	53 11.35	55 12	"	"	VII	46.430	6 53 4.50	16 23 15.14	16 1676
46	9.4	27.0	29.2	31.0	32.9	35.4	a	56 1.00	55 46	9.5	7.5	III B	45.815	6 55 54.10	16 53 48.60	16 1702
47	9.3	15.9	17.7	19.8	21.8	23.9	a	56 49.73	55 46	"	"	III A	42.290	6 56 42.82	16 59 9.63	16 1709
48	8.8	20.4	22.6	24.8	27.0	29.2	c	57 24.80	55 46	"	"	III	42.040	6 57 17.90	16 55 50.59	16 1714
49	9.0	42.2	43.9	45.9	47.9	50.1	a	0 15.90	55 44	10.0	7.0	I	45.890	7 0 9.00	16 55 3.64	16 1740
50	8.0	33.0	34.8	36.7	38.7	40.8	a	1 6.38	53 32	10.0	6.1	I	46.710	7 0 59.73	−14 43 12.46	−14 1710
51	9.0	19.6	21.3	23.4	25.4	27.5	a	1 53.36	55 52	9.5	7.5	I	47.660	7 1 46.45	−17 3 38.97	−16 1763
52	8.9	58.5	0.5	2.7	5.0	7.0	c	2 2.74	53(52)	10.0	7.2	V	46.430	7 1 56.06	15 3 12.72	14 1716
53	9.4	20.0	21.9	24.0	25.9	28.0	a	3 53.54	53 34	9.5	5.7	III	45.570	7 3 46.90	14 44 53.35	14 1728
54	8.8	23.1	25.4	27.3	29.2	31.2	e	3 57.57	53 34	"	"	VII	41.500	7 3 50.93	14 43 38.62	14 1729
55	9.0	0.7	2.8	5.0	7.0	9.2	c	4 4.94	53 34	"	"	III	45.710	7 3 58.30	14 44 56.12	14 1731
56	9.0	34.6	36.7	38.9	41.2	43.3	c	5 38.94	56 52	10.0	8.2	V	45.885	7 5 31.91	18 3 14.00	....
57	8.5	5.9	7.6	9.6	11.6	13.8	a	7 39.26	53 28	10.0	6.0	III	42.740	7 7 32.64	14 38 0.73	14 1763
58	8.1	15.7	17.8	20.0	22.1	24.3	c	8 19.98	54 8	9.0	5.5	V	48.710	7 8 13.27	15 19 58.61	15 1695
59	9.0	32.2	34.0	36.0	38.0	40.3	a	14 5.95	55 24	9.5	6.8	I A	47.395	7 13 59.11	16 38 51.54	16 1884
60	......	22.3	24.4	26.3	28.3	30.6	a	14 56.23	55 24	"	"	I A	42.320	7 14 49.39	−16 37 14.50	−16 1895
61	9.1	49.6	51.4	53.2	55.3	57.6	a	18 23.26	55 24	"	"	I	40.530	7 18 16.44	−16 33 27.04	−16 1926
62	8.0	15.8	17.4	21.6	23.7	25.8	b_2 c_3	18 25.92	55 24	"	"	III B	46.320	7 18 19.10	16 32 6.29	16 1928
63	8.8	55.2	57.4	59.6	1.8	4.0	c	18 59.60	55 12	10.0	7.6	III	43.920	7 18 52.80	16 22 34.31	16 1933
64	9.1	17.8	19.7	22.0	24.0	26.4	c	19 21.98	55 12	"	"	V A	39.620	7 19 15.18	16 24 28.12	16 1938
65	8.9	57.7	59.9	1.9	4.2	6.4	c	23 2.02	56 10	10.0	8.5	III	43.275	7 22 55.13	17 20 27.24	17 1981
66	9.0	13.6	15.5	17.6	19.4	21.7	a	24 47.52	56 10	"	"	I B	47.420	7 24 40.64	17 18 31.72	17 1993
67	8.0	39.6	41.7	43.6	45.6	47.8	a	25 13.63	56 10	"	"	I	48.250	7 25 6.74	17 22 1.67	17 1998
68	8.8	10.5	12.0	16.3	18.4	20.7	b_2 c_3	25 20.66	56 10	"	"	III B	43.940	7 25 13.78	17 17 27.12	17 1999
69	8.7	32.6	34.6	37.0	41.2	42.9	c_3 d_2	25 32.59	56 10	"	"	VI B	50.110	7 25 25.71	17 19 28.20	17 2000
70	8.6	40.8	42.3	46.6	48.7	51.0	b_2 c_3	26 50.90	53 54	10.0	6.2	III	46.090	7 26 44.26	−15 5 14.40	−15 1875

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
71	8.6	20.7	23.0	25.0	26.9	28.8	e	26 54.80	56	18	9.7	7.2	VII	43.460	7 26 47.90	−17 28 35.37	−17 2015
72	9.0	45.3	47.4	49.7	51.9	54.0	c	28 49.66	56	28	9.7	7.3	V B	47.000	7 28 42.75	17 36 29.28	17 2029
73	9.1	36.4	38.5	40.8	43.0	45.1	c	29 40.76	56	28	“	“	III B	44.780	7 29 33.86	17 35 45.27	17 2037
74	8.9	26.7	28.6	30.5	32.5	34.8	a	31 0.65	56	28	“	“	I A	45.530	7 30 53.74	17 42 26.64	17 2053
75	8.9	10.7	12.5	14.6	16.5	18.7	a	31 44.62	56	28	“	“	I A	44.700	7 31 37.71	17 42 11.01	17 2057
76	8.7	48.5	50.5	52.7	54.9	57.1	c	31 52.74	56	28	“	“	III B	43.250	7 31 45.85	17 35 16.81	17 2058
77	8.5	33.2	34.9	36.9	38.8	41.2	a	33 6.68	54	16	9.7	6.8	III	46.320	7 33 0.02	15 27 22.64	15 1941
78	9.4	8.2	10.4	12.5	16.8	18.5	c_3 d_2	33 8.26	54	16	“	“	VI B	40.430	7 33 1.61	15 22 18.34	15 1942
79	7.6	26.6	28.3	30.3	32.4	34.5	a	35 0.27	55	26	10.0	7.3	I	45.225	7 34 53.49	16 37 4.54	16 2069
80	9.2	39.9	41.8	43.7	45.6	47.9	a	36 13.40	53	52	9.7	6.3	I	44.950	7 36 6.80	−15 2 54.16	−14 2086
81	8.9	55.2	57.1	59.0	0.9	3.3	a	37 28.60	53	0	10.0	6.6	I	43.220	7 37 22.09	−14 10 19.21	−14 2138
82	8.9	30.4	32.5	34.8	36.9	39.2	c	37 34.76	56	58	9.5	7.5	V	46.740	7 37 27.82	18 9 43.47	18 1969
83	9.0	26.5	28.6	30.9	33.1	35.3	c	38 30.88	56	58	“	“	V	49.390	7 38 23.94	18 10 34.72	18 1981
84	8.9	31.9	33.7	35.7	37.6	39.9	a	41 5.40	54	0	10.0	6.2	I	48.310	7 40 58.80	15 12 1.12	15 2023
85	8.8	45.8	47.9	50.1	52.3	54.5	c	41 50.12	53	38	10.0	6.1	III	45.740	7 41 43.56	14 49 12.86	14 2200
86	8.6	14.0	16.3	18.4	20.3	22.2	e	47 48.15	56	20	10.0	8.2	V	45.865	7 47 41.33	17 31 29.14	17 2196
87	8.9	17.8	19.4	21.4	23.4	25.5	a	47 51.13	53	52	10.0	6.2	I	47.410	7 47 44.57	15 3 46.07	14 2251
88	9.0	36.7	38.5	40.5	42.4	44.6	a	0 10.10	53	26	10.0	6.3	I	44.130	8 0 3.64	14 36 46.57	14 2355
89	8.8	21.0	22.9	24.9	26.9	29.1	a	0 54.98	56	34	9.5	6.5	I B	44.990	8 0 48.21	17 41 59.56	17 2321
90	9.1	44.4	46.2	48.3	50.4	52.5	a	1 18.41	56	34	“	“	III A	49.640	8 1 11.63	−17 49 59.31	−17 2324
91	8.8	50.2	52.4	54.6	56.8	58.9	c	2 54.58	56	34	“	“	III	41.120	8 2 47.82	−17 44 1.86	−17 2337
92	9.0	18.3	20.3	22.6	24.8	27.0	c	5 22.60	55	32	10.0	7.7	III B	45.460	8 5 15.96	16 40 9.55	16 2323
93	9.2	51.0	53.0	55.2	57.5	59.6	c	6 55.26	55	32	“	“	V	49.960	8 6 48.62	−16 44 52.10	−16 2337

Reduction Elements. Zone 91.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
January 19.3....	+0.349	+0.189	+0.555	+0.350	+0.202	+0.555
19.5....	+0.350	+0.215				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		53 Eridani		54 Eridani		60 Eridani		64 Eridani		*e* Navis		20 Navis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	53 20 10.10		58 42 10.30		55 14 9.55		51 32 9.20		61 26 8.60		54 18 8.85	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	46.130	5 54.48	44.650	5 27.10	44.070	5 15.33	43.180	4 58.17	42.770	4 49.77	45.140	5 35.92
II	Red. to Mer......	.050	1.67	.625	1.61	.010	1.65	.110	1.68	.705	1.58	.125	1.66
VI	Inclination	45.880		.480		43.830		42.940		.490		44.885	
VII	Refraction.......	.820	1 21.7	.415	1 39.9	.800	1 27.6	.905	1 16.6	.415	1 52.1	.860	1 25.2

		Lalande 16304		Piazzi VIII. 95	
		° ′ ″		° ′ ″	
	CIRCLE READING.	51 6 8.50		58 2 8.30	
		r	′ ″	r	′ ″
I	Microm. Eq......	46.535	6 2.35	47.785	6 26.42
II	Red. to Mer......	.465	1.69	.750	1.62
VI	Inclination	.300		.520	
VII	Refraction.......	.220	1 15.9	.490	1 38.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
53 Eridani...........	4 33 42.23	11	+0.95	−19.70	53 27 27.9	54.8
54 Eridani...........	4 36 10.84	11	+0.99	−19.67	58 49 18.9	55.4
60 Eridani...........	4 45 47.64	11	+0.96	−19.67	55 20 54.1	55.6
64 Eridani...........	4 55 23.03	11	+0.93	−19.67	51 38 25.6	54.9
δ Ursae Minoris s. p.	6 6 7.64	8	−0.27	[−19.68]	305 34	....
e Navis.............	7 52 40.94	11	+1.01	−19.71	61 32 52.1	55.1
20 Navis.............	8 8 50.70	11	+0.95	−19.67	54 25 11.6	55.2
Lalande 16304.....	8 13 45.23	11	+0.93	−19.63	51 13 28.4	55.0
Piazzi VIII. 95.....	8 27 8.05	11	+0.98	−19.65	58 10 14.4	55.1

h		s
4.710............	*dt*	−19.678
	Hourly rate...........	+ 0.0037
		° ′ ″
	Adopted Equator Point............	38 56 55.14

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 30	30.025	30.9	30.5
5 30	30.025	30.1	29.7
6 36	30.025	29.0	28.6
7 16	30.025	28.4	28.2
8 22	30.035	27.7	27.5

Note.

60. Close double, mean observed. Magnitudes 9.0, 9.0.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					$D =$ Z. D. S. to 1895.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	+0.943	5 0	+12.410	+12.286	+12.158	+12.029	+11.899	+1.82	+1.60	+1.39	+1.18	+0.98
54	0.951	5 30	12.274	12.146	12.017	11.887	11.754	2.26	2.09	1.91	1.73	1.56
55	0.958	6 0	12.185	12.056	11.928	11.798	11.664	2.60	2.46	2.32	2.19	2.05
56	0.966	6 30	12.143	12.020	11.892	11.762	11.633	2.84	2.74	2.64	2.55	2.45
57	+0.974	7 0	12.153	12.032	11.910	11.785	11.660	2.94	2.88	2.83	2.78	2.72
		7 30	12.212	12.097	11.982	11.864	11.743	2.94	2.92	2.92	2.90	2.89
		8 0	+12.318	+12.213	12.104	11.995	11.885	+2.82	+2.85	2.88	2.92	2.94
		8 30	......	......	+12.279	+12.180	+12.079	....	....	+2.73	+2.80	+2.88

APPARENT RIGHT ASCENSION.	R					
	53°	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″	″
5 0	80.47	83.45	86.56	89.84	93.28	.....
5 30	80.54	83.52	86.64	89.93	93.37	.....
6 0	80.63	83.62	86.74	90.03	93.48	.....
6 30	80.73	83.72	86.84	90.14	93.58	.....
7 0	80.78	83.77	86.90	90.20	93.65	.....
7 30	80.84	83.83	86.96	90.26	93.71	95.53
8 0	80.91	83.91	87.04	90.34	93.80	95.61
8 30	80.97	83.97	87.10	90.41	93.86	95.68

1895 JANUARY 22. ZONE 92. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.7	43.7	45.5	47.5	49.4	51.5	a	22 17.17	54 8 10.0 7.8	I B 43.290	5 22 9.78	−15 14 8.46	−15 1037
2	8.8	35.4	37.1	39.0	41.0	43.2	a	23 8.80	54 8 " "	I A 41.275	5 23 1.39	15 19 58.37	15 1047
3	9.1	58.9	0.6	2.6	4.5	6.7	a	25 32.54	55 30 10.0 9.0	I A 50.575	5 25 24.94	16 45 2.63	16 1154
4	9.0	10.8	12.6	14.6	16.6	18.8	a	26 44.53	55 30 " "	I B 41.540	5 26 36.94	16 35 41.42	16 1160
5	8.0	2.1	3.9	5.8	7.7	9.9	a	27 35.75	55 30 " "	I A 49.080	5 27 28.14	16 44 34.85	16 1165
6	9.3	43.1	45.2	47.3	49.7	51.8	c	27 47.42	56 28 10.0 10.9	III 45.730	5 27 39.70	17 38 22.01	17 1164
7	8.1	48.3	50.1	52.0	53.9	56.2	a	37 21.98	55 36 10.0 7.6	I 46.390	5 37 14.34	16 46 32.72	16 1208
8	9.1	25.8	27.7	29.7	31.7	33.9	a	37 59.64	55 36 " "	I 48.880	5 37 51.98	16 47 20.79	16 1214
9	9.3	58.0	0.1	2.4	4.6	6.7	c	38 2.36	55 36 " "	III B 45.820	5 37 54.71	16 43 10.21	16 1215
10	8.1	13.4	15.2	17.3	19.1	21.4	a	42 47.08	55 2 10.0 7.9	I A 48.525	5 42 39.47	−16 16 29.09	−16 1244
11	9.3	53.1	55.3	57.5	59.7	1.9	c	42 57.50	55 2 " "	III B 44.330	5 42 49.91	−16 8 42.26	−16 1248
12	9.1	33.2	35.0	36.9	38.9	41.1	a	12 6.67	54 4 10.0 6.8	I 47.865	6 11 59.10	15 15 11.73	15 1327
13	9.1	0.4	2.2	4.1	6.3	8.4	a	16 34.35	56 46 10.0 10.0	I 45.840	6 16 26.45	17 56 44.72	17 1455
14	9.0	29.7	31.8	34.1	36.4	38.5	c	16 34.10	56 56 10.0 9.3	V A 40.610	6 16 26.18	18 8 22.71	18 1388
15	8.1	17.5	19.7	21.8	24.1	26.3	c	17 21.88	56 56 " "	III 46.530	6 17 13.96	18 7 0.50	18 1391
16	9.0	36.6	39.0	41.1	45.5	47.0	c_3 d_2	17 36.75	56 56 " "	VI (41).810	6 17 28.84	18 2 18.73	18 1393
17	8.6	23.0	24.9	26.9	28.9	31.2	a	18 57.09	56 56 " "	III A 46.600	6 18 49.16	18 10 17.04	18 1404
18	9.3	59.4	1.3	3.3	5.2	7.6	a	41 33.09	54 40 10.0 6.2	I 43.110	6 41 25.43	15 49 54.92	15 1502
19	8.9	26.5	28.4	30.3	32.3	34.4	a	42 0.26	55 34 10.0 8.0	III 47.680	6 41 52.49	16 45 28.43	16 1597
20	8.6	14.4	16.1	18.0	20.0	22.4	a	49 48.22	56 36 10.0 8.5	I 45.145	6 49 40.33	−17 46 44.78	−17 1668
21	8.2	44.5	46.4	48.3	50.4	52.6	a	50 18.48	56 36 " "	I 47.380	6 50 10.59	−17 47 27.90	−17 1673
22	9.0	38.7	40.8	42.9	45.1	47.3	c	50 42.96	55 10 10.0 9.9	III 49.545	6 50 35.24	16 22 7.71	16 1653
23	8.6	40.8	42.7	44.6	46.6	48.8	a	53 14.51	55 10 " "	I 47.350	6 53 6.79	16 21 24.72	16 1678
24	8.0	45.5	47.1	51.5	53.5	55.7	b_2 c_3	53 55.75	56 26 10.0 9.1	III 50.975	6 53 47.88	17 38 40.21	17 1705
25	8.8	21.7	23.7	25.6	27.6	29.9	a	54 55.69	56 26 " "	III B 40.370	6 54 47.82	17 32 3.25	17 1714
26	9.3	35.4	37.3	39.3	41.2	43.3	a	56 9.21	55 50 10.0 8.0	III A 37.330	6 56 1.41	17 1 31.26	16 1704
27	8.9	5.9	7.7	9.7	11.6	13.9	a	59 39.63	55 34 10.0 8.4	I 45.740	6 59 31.86	16 44 57.10	16 1736
28	8.8	10.2	12.0	14.1	16.1	18.2	a	0 43.84	54 32 10.0 7.7	I 46.590	7 0 36.20	15 43 10.31	15 1637
29	8.8	30.3	32.0	34.0	35.9	38.0	a	2 3.67	53 52 10.0 7.9	I 46.855	7 1 56.10	15 3 14.10	14 1716
30	8.7	33.0	34.9	36.8	38.9	41.1	a	4 6.92	56 16 10.0 8.4	I B 45.960	7 3 59.09	−17 23 51.59	−17 1792
31	.....	5.6	7.3	11.4	13.6	15.8	b_2 c_2	4 15.82	56 16 " "	VI A 46.770	7 4 7.97	−17 30 39.97	−17 1795
32	9.4	21.1	23.0	27.4	29.1	31.7	c_4 d_3	4 18.79	56 16 " "	VI 50.200	7 4 10.95	17 28 31.43	17 1798
33	9.5	0.9	3.0	7.3	8.9	11.8	c_4 d_3	4 58.71	56 16 " "	VI 50.400	7 4 50.87	17 28 35.54	17 1803
34	9.1	57.1	59.2	1.2	3.6	5.7	c	9 1.36	54 8 10.0 7.4	V 47.460	7 8 53.77	15 19 32.86	15 1704
35	8.9	21.6	23.2	25.3	27.3	29.4	a	14 55.38	56 28 10.0 8.7	I 45.960	7 14 47.53	17 39 10.75	17 1916
36	8.9	25.8	27.6	29.5	31.6	33.8	a	15 59.68	56 28 " "	I A 41.010	7 15 51.83	17 40 50.71	17 1923
37	8.8	12.7	14.6	16.7	18.6	20.9	a	17 46.71	56 24 10.0 8.1	I A 45.380	7 17 38.88	17 38 14.81	17 1935
38	8.6	27.2	29.1	31.2	33.1	35.4	a	18 1.21	56 24 " "	III (A) 42.185	7 17 53.38	17 37 15.50	17 1937
39	8.7	0.1	1.9	4.1	6.0	8.2	a	18 34.07	56 24 " "	I A 44.720	7 18 26.24	17 38 2.47	17 1942
40	8.1	42.7	44.3	48.6	50.7	53.0	b_2 c_3	18 52.94	56 24 " "	III 44.170	7 18 45.11	−17 34 39.45	−17 1947

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	c
41	9.3	20.8	23.3	25.1	27.0	29.1	e	18 54.97	56 24 10.0 8.1	VII B 37.980	7 18 47.16	−17 29 30.14	−17 1948
42	8.7	40.9	42.8	44.8	46.7	49.0	a	21 14.83	56 24 " "	I B 43.850	7 21 7.02	17 31 18.50	17 1967
43	8.8	29.4	31.3	33.4	35.4	37.6	a	22 3.43	56 24 " "	I A 44.770	7 21 55.61	17 38 4.85	17 1973
44	7.5	14.5	16.3	18.2	20.3	22.6	a	22 48.40	56 24 " "	I A 50.130	7 22 40.57	17 39 48.03	17 1980
45	8.9	2.9	4.8	6.8	8.8	11.0	a	25 36.90	56 32 10.0 8.2	I A 49.270	7 25 29.07	17 47 33.18	17 2004
46	9.4	41.0	42.9	44.9	46.9	49.1	a	26 14.97	56 32 " "	I B 40.070	7 26 7.16	17 38 8.47	17 2007
47	9.4	14.4	16.5	18.4	20.4	22.5	a	26 48.48	56 32 " "	I A 50.230	7 26 40.65	17 47 52.09	17 2014
48	9.0	5.2	6.9	11.1	13.3	15.5	b_2 c_3	27 15.47	55 48 10.0 7.9	III 44.170	7 27 7.74	16 58 40.80	16 1994
49	8.8	16.5	18.6	21.0	25.0	26.7	c_3 d_2	27 16.50	55 48 " "	(V) 45.670	7 27 8.77	16 59 11.37	16 1995
50	9.4	45.3	47.7	49.8	51.7	53.6	e	27 19.62	55 48 " "	VII 45.995	7 27 11.89	−16 59 19.18	−16 1997
51	9.3	59.8	2.3	4.0	6.1	8.1	e	28 34.07	55 48 " "	VII 50.080	7 28 26.34	−17 0 38.10	−16 2012
52	9.0	28.5	30.8	32.9	35.2	37.3	c	30 32.94	55 48 " "	III B 38.650	7 30 25.23	16 53 42.36	16 2027
53	8.9	56.6	58.7	0.6	2.5	4.8	a	31 30.54	55 48 " "	III B 46.520	7 31 22.83	16 56 13.80	16 2036
54	8.8	50.5	52.5	54.7	56.8	59.1	c	31 54.72	55 48 " "	III 42.615	7 31 47.01	16 58 12.81	16 2041
55	8.1	43.5	45.2	47.2	49.2	51.4	a	35 17.31	56 30 10.0 9.1	I B 47.310	7 35 9.53	17 38 31.35	17 2081
56	9.3	53.9	55.8	57.9	59.8	2.2	a	35 27.94	56 30 " "	III 43.740	7 35 20.16	17 40 38.70	17 2083
57	9.4	2.3	4.4	6.6	8.8	11.0	c	36 6.62	56 30 " "	V A 42.435	7 35 58.83	17 43 30.11	17 2092
58	9.5	32.8	34.6	36.6	38.5	40.7	a	36 6.65	56 30 " "	III B 46.480	7 35 58.87	17 38 17.72	17 2091
59	9.5	36.2	37.7	42.0	44.1	46.4	b_2 c_3	37 46.35	55 58 10.0 8.4	III B 42.610	7 37 38.64	17 5 2.01	16 2087
60	9.4	20.7	22.7	24.9	27.2	29.5	c	38 25.00	55 58 " "	III 47.530	7 38 17.29	−17 9 50.52	−17 2110
61	8.4	24.5	26.4	28.3	30.3	32.5	a	40 58.21	55 8 10.0 8.1	I 50.230	7 40 50.58	−16 20 38.56	−16 2111
62	9.2	10.1	11.8	13.8	15.8	18.0	a	41 43.71	55 8 " "	I 48.270	7 41 36.08	16 20 1.26	16 2119
63	8.7	31.0	32.8	34.8	36.7	39.0	a	47 4.74	55 34 10.0 8.4	I 48.460	7 46 57.09	16 46 8.48	16 2163
64	8.9	55.0	56.8	58.8	0.8	3.0	a	47 28.81	55 56 10.0 7.6	III 47.240	7 47 21.13	17 7 47.96	17 2190
65	9.5	41.0	42.9	44.7	46.7	49.0	a	52 14.69	55 24 10.0 7.3	I B 40.220	7 52 7.09	16 30 17.38	16 2204
66	9.4	24.6	26.5	28.6	30.4	32.7	a	52 58.41	55 24 " "	I A 37.910	7 52 50.80	16 36 1.70	16 2207
67	9.1	24.7	26.6	28.5	30.5	32.7	a	0 58.69	56 52 10.0 7.7	I 48.035	8 0 50.98	18 4 9.57	17 2322
68	8.9	53.9	55.5	59.8	1.9	4.3	b_2 c_3	1 4.18	56 52 " "	III A 49.860	8 0 56.46	18 8 1.11	18 2162
69	8.6	26.4	28.6	30.8	33.0	35.2	c	1 30.80	56 52 " "	V B 49.580	8 1 23.08	18 1 29.30	17 2326
70	9.0	58.5	1.0	2.9	4.8	6.9	e	1 32.65	56 52 " "	...(B) 37.820	8 1 24.94	−17 57 45.59	−17 2327
71	8.9	15.8	17.7	19.7	21.7	23.9	a	5 49.77	56 26 10.0 8.4	I 46.390	8 5 42.12	−17 37 38.62	−17 2371
72	8.8	43.3	45.2	47.1	49.0	51.2	a	8 16.67	53 6 10.0 5.8	I 43.700	8 8 9.36	14 16 36.21	14 2420
73	8.5	59.7	1.3	3.3	5.4	7.7	a	9 33.46	56 14 10.0 7.0	I B 44.410	8 9 25.86	17 21 46.77	17 2399
74	8.9	33.3	35.1	37.0	39.1	41.4	a	10 7.16	56 14 " "	I 48.810	8 9 59.55	17 26 25.27	17 2404
75	9.6	......	25.0	27.0	29.0	31.1	a	17 56.97	45 50 10.0 7.6	I 49.260	8 17 49.45	17 2 35.65	16 2414
76	9.1	13.1	14.9	16.8	18.8	21.0	a	24 46.90	56 16 10.0 8.6	I 46.120	8 24 39.38	17 27 39.68	17 2516
77	8.0	0.6	2.6	4.5	6.6	8.7	a	27 34.69	56 52 10.0 8.2	I 43.550	8 27 27.12	18 2 53.17	17 2534
78	8.7	38.6	40.6	42.6	44.5	46.8	a	28 12.58	56 10 10.0 7.8	I B 42.035	8 28 5.09	17 17 7.87	17 2541
79	9.1	34.7	36.6	38.5	40.5	42.7	a	29 8.58	56 10 " "	III A 49.900	8 29 1.08	17 26 9.45	17 2549
80	9.0	16.2	17.9	22.3	24.6	26.7	b_2 c_3	29 26.62	56 10 " "	III 52.710	8 29 19.13	−17 23 48.99	−17 2552
81	8.8	50.8	53.1	55.2	57.4	59.5	c	29 55.20	56 10 " "	III 49.540	8 29 47.71	−17 22 48.31	−17 2561
82	9.2	56.3	58.2	0.1	2.1	4.4	a	35 30.19	56 10 " "	I 44.500	8 35 22.74	17 21 11.30	17 2603
83	9.3	7.8	9.7	11.7	13.6	15.9	a	44 41.60	55 30 10.0 8.0	I 46.550	8 44 34.27	−16 41 51.64	−16 2596

Reduction Elements. Zone 92.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
January 22.3....	+0.418	+0.172	+0.501	+0.406	−0.161	+0.528
22.5....	+0.393	+0.150	+0.555			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	β Orionis		γ Leporis		δ Leporis		η Leporis		Lalande 16304		Lalande 17333	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	47 10 9.35		61 18 8.90		59 42 8.55		53 2 8.25		51 6 8.70		57 12 9.10	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.400	5 2.15	46.140	5 54.96	47.505	6 20.71	42.140	4 37.96	46.655	6 5.40	45.085	5 34.50
II Red. to Mer.....	.305	1.72	.115	1.58	.410	1.59	.090	1.67	.630	1.69	.040	1.63
VI Inclination	.160		45.890		.225		41.870		.460		44.825	
VII Refraction......	.100	1 4.1	.835	1 48.5	.210	1 41.8	.820	1 19.0	.410	1 13.5	.760	1 31.8

	15 Hydrae	
	° ′ ″	
CIRCLE READING.	45 36 8.05	
	r	′ ″
I Microm. Eq.....	48.910	6 47.75
II Red. to Mer......	.860	1.73
VI Inclination	.650	
VII Refraction.....	.570	1 0.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
β Orionis	5 9 50.35	11	+0.91	−20.46	47 16 17.3	56.7
γ Leporis	5 40 26.14	11	+1.02	20.53	61 25 53.9	56.0
δ Leporis	5 47 9.35	11	+1.01	−20.54	59 50 12.6	55.8
ν Leporis	5 51 58.43	11	+0.96	−20.58	53 8 6.9	55.2
δ Ursae Minoris S. P.	6 6 10.10	5	−1.18	[−20.89]	305 34	....
Lalande 16304	8 13 46.17	11	+0.94	−20.54	51 13 29.3	55.1
Lalande 17333	8 42 19.53	11	+0.99	−20.58	57 19 17.0	54.9
15 Hydrae	8 46 46.15	11	+0.90	−20.61	45 43 58.0	56.8
76 Draconis S. P.	8 50 18.61	11	−0.27	[−20.41]	301 6	....
Piazzi VIII. 227	8 54 9.42	11	+0.97	−20.54	54 38	....

h 5.622 .... *dt* .... s −20.528

Hourly rate .... − 0.0132

Adopted Equator Point............ 38° 56′ 55.79″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 10	29.425	32.8	31.6
6 10	29.425	32.4	30.7
7 5	29.435	31.8	30.6
7 55	29.435	31.4	32.3
8 50	29.425	32.5	33.7

Notes.

70. Bisected 8^s beyond VII.

76 Draconis S. P. Steady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					D = Z. D. S. to 1895.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	+0.954	5 0	......	+12.300	+12.175	+12.047	+11.918	....	+1.12	+0.90	+0.69	+0.47
54	0.961	5 30	......	12.155	12.026	11.897	11.764	....	1.54	1.35	1.17	0.99
55	0.969	6 0	......	12.058	11.930	11.800	11.668	....	1.86	1.72	1.57	1.42
56	0.977	6 30	......	12.013	11.886	11.757	11.628	....	2.07	1.97	1.86	1.74
57	+0.985	7 0	+12.138	12.017	11.896	11.771	11.645	+2.27	2.19	2.12	2.05	1.99
		7 30	12.187	12.072	11.957	11.840	11.720	2.20	2.19	2.16	2.12	2.10
		8 0	12.283	12.179	12.071	11.962	11.851	2.06	2.07	2.09	2.10	2.13
		8 30	+12.427	+12.333	12.234	12.136	12.036	+1.78	+1.84	1.91	1.96	2.02
		9 0	......	......	+12.446	+12.360	+12.271	....	....	+1.62	+1.72	+1.83

APPARENT RIGHT ASCENSION.	R					
	53°	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″	″
5 0	.....	81.50	84.55	87.76	91.12	92.87
5 30	.....	81.58	84.63	87.84	91.20	92.96
6 0	.....	81.65	84.71	87.93	91.29	93.04
6 30	.....	81.67	84.73	87.95	91.31	93.07
7 0	.....	81.69	84.75	87.97	91.33	.....
7 30	.....	81.58	84.63	87.84	91.20	.....
8 0	78.52	81.44	84.47	87.68	91.04	.....
8 30	78.36	81.27	84.30	87.50	90.85	.....
9 0	78.21	81.12	84.14	87.34	90.68	.....

1895 JANUARY 24. ZONE 93. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.7	58.7	0.8	2.7	4.7	6.8	a	50 32.56	55 18 10.0 8.6	III B 43.010	6 50 24.46	−16 24 49.94	−16 1652
2	8.9	29.6	31.3	33.3	35.2	37.5	a	51 3.21	55 18 " "	III A 43.860	6 50 55.09	16 31 34.80	16 1655
3	8.8	19.9	22.0	24.1	26.4	28.6	c	51 24.20	55 18 " "	V B 41.860	6 51 16.10	16 24 30.01	16 1658
4	8.9	50.0	51.9	53.8	55.8	58.0	a	1 23.72	55 12 10.0 8.5	I A 48.035	7 1 15.61	16 26 57.14	16 1755
5	8.9	4.5	6.4	8.3	10.4	12.6	a	1 38.25	55 12 " "	III B 50.010	7 1 30.15	16 21 8.73	16 1761
6	8.7	30.0	31.8	35.8	38.0	40.3	b_2 c_3	2 40.24	55 28 10.0 8.6	III 54.610	7 2 32.10	16 41 52.20	16 1774
7	9.0	49.1	51.2	53.4	55.6	57.8	c	2 53.42	55 28 " "	V 50.350	7 2 45.28	16 40 32.29	16 1777
8	9.0	54.0	55.8	57.8	59.7	2.0	a	4 27.96	56 54 10.0 10.0	I A 40.530	7 4 19.66	18 6 40.88	18 1701
9	8.5	32.3	34.4	36.7	38.9	41.0	c	4 36.66	56 54 " "	III B 44.270	7 4 28.38	18 1 26.27	17 1801
10	8.9	18.3	20.4	22.3	24.2	26.5	a	5 52.43	56 54 " "	I B 50.410	7 5 44.14	−18 3 22.69	−17 1815

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
11	9.1	54.9	57.1	59.3	1.4	3.7	c	5 59.28	56 54 10.0 10.0	V B	41.120	7 5 50.99	−18 0 28.14	−17 1819
12	9.3	22.8	24.6	26.7	28.7	30.8	a	14 56.82	56 54 " "	I A	46.090	7 14 48.55	18 8 32.05	18 1780
13	8.8	54.0	55.8	57.7	59.7	2.0	a	19 27.83	56 20 9.5 8.5	I	48.090	7 19 19.63	17 31 54.79	17 1954
14	9.1	11.8	13.6	15.6	17.5	19.7	a	26 45.27	53 54 9.5 7.6	I	48.160	7 26 37.36	15 5 50.85	15 1873
15	7.8	43.3	44.8	49.0	51.2	53.4	b_2 c_3	26 53.35	53 34 10.0 7.7	III	46.140	7 26 45.47	14 45 13.39	14 1944
16	8.1	17.5	19.4	21.4	23.5	25.6	a	27 51.35	55 30 10.0 9.2	III A	47.830	7 27 43.26	16 45 7.53	16 2001
17	9.0	4.5	6 2	10.5	12.5	14.7	b_2 c_3	28 14.74	55 30 " "	III B	42.150	7 28 6.66	16 36 50.34	16 2006
18	9.2	36.8	38.6	40.7	42.7	44.9	a	29 10.66	55 52 10.0 8.5	III	46.700	7 29 2.54	17 3 32.77	16 2015
19	9.1	5.4	7.3	9.2	11.0	13.4	a	30 39.22	56 6 10.0 9.5	I	44.590	7 30 31.08	17 16 52.19	17 2043
20	8.0	18.3	20.0	22.0	24.1	26.3	a	30 52.11	56 6 " "	III A	44.010	7 30 43.97	−17 19 57.59	−17 2048
21	9.0	58.6	0.7	2.9	7.2	8.9	c_3 d_2	30 58.59	56 0 10.0 8.5	V	44.870	7 30 50.46	−17 11 0.58	−17 2050
22	9.3	32.4	34.3	36.3	38.3	40.5	a	32 6.29	56 0 " "	III A	43.410	7 31 58.16	17 13 45.74	17 2059
23	9.3	52.8	54.7	56.6	58.6	0.7	a	33 26.62	56 0 " "	I	47.130	7 33 18.50	17 11 41.25	17 2063
24	9.3	15.7	17.8	19.8	21.7	24.0	a	33 49.73	56 0 " "	III B	43.710	7 33 41.62	17 7 23.88	17 2068
25	9.2	25.2	27.0	29.0	30.9	33.2	a	34 58.88	55 16 10.0 8.5	I	45.760	7 34 50.84	16 27 13.12	16 2068
26	9.0	26.3	28.1	30.0	32.0	34.3	[illegible]	37 59.91	54 54 10.0 7.3	I	47.890	7 37 51.92	16 5 53.44	15 1989
27	9.4	13.5	15.6	17.8	19.8	22.3	c	38 17.80	55 14 10.0 8.5	III	43.490	7 38 9.78	16 24 32.73	16 2092
28	......	57.5	59.4	1.3	3.3	5.6	a	40 31.10	54 22 10.0 8.2	IV B	37.450	7 40 23.18	15 27 21.82	15 2015
29	9.0	28.7	31.0	33.0	35.3	37.6	c	41 33.12	54 22 " "	III A	46.540	7 41 25.19	15 36 44.12	15 2028
30	9.0	19.0	21.5	23.3	25.0	27.1	e	41 53.08	56 24 10.0 9.1	V	46.680	7 41 44.94	−17 35 41.38	−17 2149
31	9.1	56.0	58.2	0.3	2.1	4.1	e	47 30.42	53 52 10.0 6.7	VII	49.490	7 47 22.56	−15 4 29.60	−14 2247
32	8.8	9.1	11.0	13.0	15.0	17.4	a	52 42.82	54 34 10.0 7.6	I	48.300	7 52 34.90	15 46 6.18	15 2148
33	9.1	7.5	9.6	11.9	14.0	16.3	(c)	53 11.86	54 46	....	....	7 53 3.92	16 1 9	15 2151
34	8.0	9.4	11.2	13.3	15.3	17.5	a	0 43.21	55 32 10.0 8.8	III	48.660	8 0 35.23	16 44 21.88	16 2277
35	8.6	51.5	53.7	55.9	58.1	0.3	c	1 55.90	56 54 10.5 11.1	III	44.505	8 1 47.80	18 5 8.71	17 2331
36	8.8	17.9	19.8	21.8	23.8	25.9	a	26 51.48	53 58 10.0 8.0	I	46.930	8 26 43.79	15 9 50.64	15 2477
37	9.2	28.7	30.7	32.7	34.6	36.9	a	28 2.54	55 16 10.0 9.5	I	45.170	8 27 54.74	16 27 22.24	16 2496
38	8.5	7.5	9.5	11.3	13.4	15.6	a	28 41.20	54 42 10.5 9.4	I	44.330	8 28 33.45	15 53 4.68	15 2488
39	9.3	38.2	40.3	42.3	44.6	46.8	c	28 42.44	54 42 " "	III A	43.500	8 28 34.68	15 56 5.18	15 2489
40	9.3	57.0	59.2	1.3	5.6	7.3	c_3 d_2	28 57.05	54 42 " "	VI	48.275	8 28 49.30	−15 54 25.01	−15 2492
41	8.8	4.9	6.8	8.6	10.7	13.0	a	58 38.75	56 4 10.0 9.8	I	44.920	8 58 31.08	−17 15 30.35	−17 2726
42	8.8	35.5	37.7	40.0	42.1	44.4	c	58 39.94	56 4 " "	V	46.040	8 58 32.27	17 15 55.57	17 2727
43	9.0	14.0	16.2	18.2	20.6	22.9	c	50 18.38	56 26 10.0 9.8	III	50.240	9 50 11.16	17 39 29.53	17 3003
44	9.0	3.1	5.2	7.3	9.6	11.9	c	51 7.42	56 26 " "	III	46.105	9 51 0.21	−17 38 10.36	−17 3007

Reduction Elements. Zone 93.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
January 24.3....	+0.469	+0.175	+0.557	+0.454	+0.188	+0.588
24.5....	+0.438	+0.202	+0.620			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	5 Monocerotis		β Canis Majoris		ξ^2 Canis Majoris		α Canis Majoris		Piazzi IX. 13		α Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	45 4 10.55		56 44 10.75		61 42 9.70		55 24 9.10		58 8 10.30		47 2 9.85	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	47.145	6 15.02	44.510	5 23.40	45.580	5 44.06	45.055	5 33.69	46.985	6 10.87	45.955	5 52.00
II Red. to Mer......	.150	1.74	.430	1.63	.505	1.57	44.980	1.65	.950	1.62	.930	1.72
VI Inclination	46.980		.235		.340		.830		.695		.755	
VII Refraction	.890	1 1.8	.220	1 33.9	.280	1 54.4	.680	1 29.4	.665	1 39.9	.725	1 6.8

	κ Hydrae		υ^2 Hydrae	
	° ′ ″		° ′ ″	
CIRCLE READING.	52 40 8.25		51 22 9.30	
	r	′ ″	r	′ ″
I Microm. Eq.	48.820	6 46.06	48.910	6 47.79
II Red. to Mer......	.755	1.67	.870	1.69
VI Inclination	.555		.640	
VII Refraction	.505	1 21.6	.580	1 18.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Ursae Minoris S. P.	6 6 11.15	8	−1.43	[−21.44]	305 34	....
5 Monocerotis	6 10 5.50	11	+1.01	−20.93	45 11 29.1	57.7
β Canis Majoris	6 18 26.00	11	+1.10	−21.04	56 51 9.7	56.6
ξ² Canis Majoris	6 31 0.85	11	+1.15	−21.08	61 49 49.7	56.0
α Canis Majoris	6 40 52.92	11	+1.09	−21.07	55 31 13.8	55.9
76 Draconis S. P.	8 50 19.09	11	−0.35	[−20.88]	301 6	....
Piazzi IX. 13	9 7 31.65	11	+1.12	−21.04	58 16 2.7	57.2
α Hydrae	9 22 47.26	11	+1.02	−21.05	47 9 10.4	57.4
κ Hydrae	9 35 37.85	11	+1.07	−21.06	52 48 17.6	56.4
υ² Hydrae	10 0 22.19	10	+1.06	−21.11	51 30 16.8	56.6

h 6.420 .... *dt* .... s −21.030
Hourly rate .... − 0.0113

Adopted Equator Point ....38° 56′ 56.″72

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 12	29.865	23.3	21.6
7 9	29.875	21.6	20.5
8 3	29.875	20.6	19.4
9 0	29.885	20.2	18.6
9 52	29.915	19.7	17.7

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. S. to 1895.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
54	+1.077	6 30	......	......	+11.882	+11.755	......	....	....	+1.61	+1.50	....
55	1.086	7 0	+12.129	+12.008	11.886	11.763	+11.637	+1.88	+1.81	1.73	1.64	+1.57
56	1.095	7 30	+12.171	12.059	11.942	11.826	11.707	+1.81	1.76	1.73	1.69	1.66
57	+1.105	8 0	......	12.157	12.050	11.942	11.831	....	1.62	1.63	1.64	1.64
		8 30	......	+12.305	+12.208	12.110	12.010	....	+1.38	+1.42	1.48	1.53
		9 0	......	......	......	12.327	12.239	....	....	....	1.22	1.31
		9 30	......	......	......	12.590	12.515	....	....	....	0.85	0.99
		10 0	......	......	......	+12.893	+12.832	....	....	....	+0.39	+0.57

APPARENT RIGHT ASCENSION.	*R*			
	54°	55°	56°	57°
h m	″	″	″	″
6 30	84.59	87.74	91.08	94.56
7 0	84.71	87.86	91.20	94.69
7 30	84.82	87.99	91.33	94.82
8 0	84.94	88.11	91.46	94.95
8 30	85.04	88.21	91.56	95.06
9 0	85.13	88.31	91.67	95.17
9 30	85.27	88.46	91.82	95.33
10 0	85.42	88.62	91.98	95.50

1895 JANUARY 31. ZONE 94. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.5	31.8	33.8	35.9	37.8	40.0	a	51 5.69	55 18 10.0	9.9	I A	43.970	6 50 54.88	−16 31 35.14	−16 1655
2	8.6	22.6	24.7	26.8	29.0	31.2	c	51 26.86	55 18 "	"	III B	41.905	6 51 16.07	16 24 29.26	16 1658
3	8.2	5.2	7.2	9.2	11.2	13.3	a	4 39.30	56 50 10.0	10.8	I	46.845	7 4 28.32	18 1 27.07	17 1801
4	9.1	8.2	10.4	12.6	14.7	17.0	c	5 12.58	55 36 10.0	9.6	III	44.055	7 5 1.74	16 46 31.00	16 1801
5	8.5	29.0	30.9	32.9	34.9	37.1	a	26 3.08	57 2 10.0	10.5	I	46.190	7 25 52.10	18 13 23.96	18 1867
6	8.7	15.9	17.5	19.4	21.5	23.8	a	26 49.67	56 18 10.0	10.5	I	47.400	7 26 38.78	17 29 44.98	17 2013
7	8.7	4.7	6.7	8.9	11.0	13.3	c	27 8.92	54 54 9.5	9.0	III	47.625	7 26 58.19	16 5 45.80	16 1991
8	8.7	59.6	1.5	3.6	5.6	7.8	a	28 33.39	54 54 "	"	I	51.270	7 28 22.66	16 6 54.42	16 2010
9	9.0	37.0	38.8	40.6	42.7	44.8	a	30 10.37	53 40 9.2	7.5	I	42.525	7 29 59.78	14 50 2.55	14 1979
10	7.8	26.9	28.7	30.7	32.5	34.8	a	31 0.36	53 58 10.0	7.9	I	47.770	7 30 49.73	−15 9 45.03	−15 1914
11	8.4	14.5	16.3	18.3	20.2	22.5	a	31 48.22	55 30 10.0	9.8	I	42.970	7 31 37.43	−16 40 18.97	−16 2037
12	8.7	50.0	51.5	55.8	57.9	0.1	(b_2c_3)	32 0.10	54 52 10.0	10.3	III	46.740	7 31 49.38	16 3 31.57	15 1926
13	9.3	30.8	32.9	35.0	39.3	40.9	c_3 d_2	32 30.77	54 6 10.0	9.0	V B	43.170	7 32 20.14	15 13 8.17	15 1932
14	9.2	24.7	26.8	29.0	31.2	33.2	c	33 28.98	54 6 "	"	V A	40.840	7 33 18.34	15 18 52.07	15 1945
15	8.1	5.6	7.8	9.9	12.1	14.2	c	38 9.92	54 32 10.0	9.7	III	45.195	7 37 59.24	15 43 3.01	15 1992
16	8.4	23.0	25.0	27.2	29.5	31.6	c	41 27.26	57 0 10.0	10.8	III	46.800	7 41 16.34	18 11 43.89	18 2006
17	8.9	1.9	3.9	6.1	8.4	10.7	c	42 6.20	57 0 "	"	III A	48.230	7 41 55.27	18 15 26.10	18 2013
18	9.1	21.6	23.5	25.4	27.5	29.7	a	28 55.47	55 56 9.5	8.6	I	47.210	8 28 44.86	−17 8 2.23	−16 2503

1895 JANUARY 31. ZONE 95. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
19	9.2	53.4	55.2	57.2	59.2	1.3	a	51 26.75	52 56 10.0 9.3	I	47.890	11 51 18.11	−14 8 43.24	−13 3476
20	9.0	28.0	30.1	32.2	34.4	36.7	c	51 32.28	52 56 " "	III	47.870	11 51 23.64	14 8 41.91	13 3477
21	9.3	16.0	17.9	19.8	21.8	23.8	a	59 49.47	53 50 10.0 10.6	I (B)	42.270	12 59 41.67	14 57 40.16	14 3636
22	9.5	33.3	35.6	37.4	39.4	41.3	e	0 7.69	53 50 " "	VII(A)	40.680	12 59 59.90	15 3 43.12	14 3638
23	8.8	32.4	34.1	36.1	38.2	40.3	a	14 5.84	53 50 10.0 10.0	I	47.250	13 13 58.22	15 2 27.09	14 3690
24	9.0	2.9	4.8	6.8	8.7	10.9	a	14 36.64	55 14 10.0 10.5	I	43.430	13 14 29.10	16 25 18.85	16 3638
25	8.9	43.5	45.0	49.3	51.4	53.5	(b_2c_3)	14 53.55	53 44 10.0 9.0	III	44.130	13 14 45.93	14 55 28.17	14 3694
26	9.1	22.5	24.7	26.5	28.5	30.5	e	14 56.92	53 12 10.0 8.5	VII	45.635	13 14 49.27	14 23 58.35	14 3695
27	9.3	14.4	16.1	18.1	20.0	22.3	a	17 47.82	54 2 10.0 8.2	I	43.535	13 17 40.25	15 13 14.94	14 3707
28	10.0	11.3	13.6	15.8	17.7	19.8	c	30 15.64	53 46 10.0 9.5	V	43.700	13 30 8.21	−14 57 19.26	−14 3748
29	9.0	45.5	47.8	49.9	52.1	54.2	c	25 49.90	55 18 10.0 10.9	III	43.080	14 25 43.26	−16 28 58.83	−16 3884
30	8.0	7.8	9.6	11.6	13.5	15.6	a	44 41.25	53 54 10.0 10.5	I	48.910	14 44 34.71	15 6 38.07	14 4039
31	9.3	......	52.3	54.3	56.4	58.5	a	45 24.24	55(20) 10.0 11.9	I B	41.900	14 45 17.84	16 27 15.28	16 3947
32	9.4	40.0	41.6	45.8	48.1	50.4	b_2 c_3	45 50.24	55(20) " "	III A	43.590	14 45 43.85	16 34 17.91	16 3949
33	9.4	0.7	2.9	4.9	9.3	10.9	c_3 d_2	46 0.69	55(20) " "	VI (A)	43.315	14 45 54.30	16 34 15.07	16 3950
34	9.8	10.6	12.4	14.3	16.4	18.7	a	49 44.08	53 42 10.0 10.5	I	45.445	14 49 37.57	14 53 29.33	14 4067
35	9.0	33.9	35.7	37.8	39.8	42.0	a	50 7.45	53 42 " "	III A	43.280	14 50 0.95	14 56 4.07	14 4069
36	......	9.4	11.5	13.7	17.9	19.5	c_3 d_2	50 9.40	53 8 10.0 10.6	VI	46.050	14 50 2.84	14 19 43.42	14 4070
37	9.2	0.1	1.6	3.8	5.6	7.8	a	51 33.35	53 24 10.0 10.2	III A	45.800	14 51 26.84	14 38 50.80	14 4073
38	9.2	59.6	1.7	3.9	6.1	8.3	c	52 3.92	53 24 " "	III B	39.595	14 51 57.40	−14 30 23.20	−14 4077
39	......	57.8	59.9	2.0	4.2	6.5	c	55 2.08	53 50 10.5 12.1	III	47.480	14 54 55.65	−15 2 10.13	−14 4086
40	......	58.3	0.3	29.6	31.6	33.9	a_1 c_4	57 31.77	53 58 10.0 10.9	I A	41.910	14 57 25.38	15 11 34.64	15 4013
41	8.7	55.0	57.2	59.3	1.5	3.8	c	58 59.36	56 18 10.0 11.8	III A	38.830	14 58 53.22	17 30 45.95	17 4246
42	9.1	27.2	29.4	31.5	33.4	35.4	e	59 1.29	56 18 " "	VII A	38.640	14 58 55.15	17 30 45.51	17 4247
43	9.4	58.3	0.1	2.1	4.0	6.3	a	1 31.67	53 4 9.5 9.5	I	48.310	15 1 25.22	14 16 17.60	14 4118
44	8.9	38.0	39.9	42.1	44.4	46.6	c	1 42.20	53 4 " "	III B	50.915	15 1 35.74	14 13 55.63	14 4119
45	8.7	28.7	30.9	33.0	34.9	37.4	c	2 32.98	53 4 " "	III B	46.370	15 2 26.53	−14 12 28.10	−14 4123

Reduction Elements. Zones 94 and 95.

1895.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
January 31.4....	+0.436	+0.250	+0.623	+0.449	+0.243	+0.604
31.6....	+0.462	+0.236	+0.585			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	α Canis Majoris		Piazzi VI. 303		γ Canis Majoris		Piazzi VII. 85		9 Navis		ι Navis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	55 24 10.00		64 6 9.55		54 18 9.75		47 36 9.30		52 26 9.45		62 50 10.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.060	5 34.46	43.140	4 57.50	46.400	5 59.62	47.790	6 27.46	48.230	6 35.77	42.800	4 50.83
II Red. to Mer......	.040	1.65	.070	1.55	.380	1.66	.790	1.71	.180	1.65	.765	1.56
VI Inclination	44.810		42.895		.095		.590			−0.59	.520	
VII Refraction.......	.795	1 29.1	.890	2 6.4	.075	1 25.6	.590	1 7.5	47.960	1 20.1	.520	1 59.8

	20 Navis		Bradley 1212		ζ Crateris		ψ Virginis		53 Virginis		73 Virginis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 18 9.50		46 28 9.05		56 36 9.80		47 48 9.60		54 28 10.05		57 0 10.60	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.235	5 37.38	43.005	4 55.25	44.000	5 13.13	45.960	5 50.04	44.250	5 18.31	47.890	6 28.00
II Red. to Mer......	.140	1.66	42.940	1.72	43.910	1.63	.835	1.71	.200	1.65	.810	1.63
VI Inclination	.000		.800		.710		.595		43.955		.610	
VII Refraction.......	44.935	1 25.7	.780	1 4.9	.635	1 34.0	.560	1 8.5	.930	1 26.9	.560	1 35.5

	89 Virginis		2 Librae		Mayer 575		μ Virginis		ι Librae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	56 26 10.35		50 4 10.75		58 48 11.25		44 2 10.45		58 12 10.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.145	5 55.98	45.290	5 39.13	45.810	5 48.35	46.440	6 0.25	48.850	6 46.90
II Red. to Mer......	.120	1.65	.310	1.70	.750	1.60	.335	1.75	.810	1.61
VI Inclination	45.880	−0.88	.065		.540		.160		.615	
VII Refraction.......		1 33.4	.015	1 14.4	.500	1 42.8	.150	1 0.3	.540	1 40.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
α Canis Majoris	6 40 55.58	11	+1.13	−23.80	55 31 15.2	55.9
Piazzi VI. 303	6 54 41.93	11	+1.22	−23.82	64 13 15.4	56.6
γ Canis Majoris	6 59 24.69	11	+1.12	−23.75	54 25 36.6	55.2
Piazzi VII. 85	7 17 24.31	11	+1.07	−23.81	47 43 46.0	55.7
λ Ursae Minoris S. P.	7 27 3.39	2	−6.80	[−22.97]	307 54	....
9 Navis	7 47 18.88	11	+1.11	−23.77	52 34 6.4	56.1
ι Navis	8 3 28.65	11	+1.20	−23.87	62 57 2.2	55.9
20 Navis	8 8 54.77	11	+1.12	−23.83	54 25 14.2	55.0
Bradley 1212	8 30 45.18	11	+1.06	−23.81	46 34 10.9	55.5
ζ Crateris	11 39 50.36	11	+1.14	−23.88	56 42 58.6	54.4
ψ Virginis	12 49 17.30	11	+1.07	−23.91	47 55 9.9	55.5
53 Virginis	13 6 51.80	11	−1.12	−23.88	54 34 56.9	55.4
α Ursae Minoris S. P.	13 20 16.80	4	−5.49	[−24.54]	307 42	....
73 Virginis	13 26 46.43	11	+1.15	−23.83	57 8 15.7	55.4
89 Virginis	13 44 33.29	11	+1.14	−23.86	56 33 40.5	54.7
2 Librae	14 18 9.85	11	+1.09	−23.88	50 11 6.0	53.4
Mayer 575	14 29 19.25	11	+1.16	−23.90	58 55 44.0	55.2
μ Virginis	14 37 54.79	11	+1.05	−23.87	44 9 12.7	55.3
ι Librae	15 6 37.02	11	+1.16	−23.91	58 20 39.9	53.7

h s
6.000 .... *dt* .... −23.791
Hourly rate .... − 0.0116

° ′ ″
Adopted Equator Point before 10h.. 38 56 55.74
Adopted Equator Point after 10h... 38 56 54.78

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 38	29.975	25.6	24.4
7 43	29.965	24.9	23.5
8 32	29.965	24.6	23.2
11 41	29.975	23.2	20.6
12 51	29.965	21.6	19.6
13 46	29.965	21.9	20.5
14 18	29.975	20.4	18.6
15 4	29.975	19.4	17.8

Notes.
10. Reddish.
28. Very difficult.
36. Close double, mean observed.
9. Navis. Clouds after this.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					$D =$ Z. D. S. to 1895.0				
			53°	54°	55°	56°	57°	53°	54°	55°	56°	57°
°	s	h m	s	s	s	s	s	″	″	″	″	″
53	+1.111	6 30	......	......	+11.935	+11.808	......	....	....	+0.50	+0.35	....
54	1.119	7 0	+12.161	+12.041	11.920	11.796	+11.673	+0.75	+0.63	0.53	0.41	+0.31
55	1.127	7 30	12.184	12.071	11.956	11.841	11.722	+0.59	0.52	0.45	0.37	0.31
56	1.136	8 0	......	12.150	12.044	11.937	11.826	....	+0.31	+0.28	0.24	0.22
57	+1.144	8 30	......	......	......	12.081	11.983	....	....	....	+0.03	+0.04
		11 30	13.868	13.859	......	......	......	−3.73	−3.47	....	....	....
		12 0	14.210	14.218	......	......	......	4.50	4.21	....	....	....
		12 30	14.564	14.588	......	......	......	5.29	4.99	....	....	....
		13 0	14.925	14.964	15.004	15.044	......	6.09	5.77	−5.44	−5.12	....
		13 30	15.284	15.339	15.395	15.450	......	6.87	6.52	6.19	5.84	....
		14 0	15.638	15.708	15.777	15.849	......	7.62	7.27	6.92	6.57	....
		14 30	15.980	16.062	16.145	16.229	16.315	8.33	7.98	7.62	7.27	−6.91
		15 0	16.304	16.397	+16.493	+16.589	+16.685	9.01	8.66	−8.30	−7.94	−7.58
		15 30	+16.603	+16.706	......	......	......	−9.61	−9.25	....	....	....

APPARENT RIGHT ASCENSION.	*R*					
	53°	54°	55°	56°	57°	57° 30′
h m	″	″	″	″	″	″
6 30	.....	.....	87.46	90.78	.....	.....
7 0	.....	.....	87.52	90.85	94.32	96.13
7 30	81.44	84.45	87.60	90.93	94.41	96.22
8 0	81.48	84.49	87.64	90.97	.....	.....
8 30	.....	.....	.....	90.99	.....	.....
11 30	81.98	85.02	.....	.....	.....	.....
12 0	82.03	85.07	.....	.....	.....	.....
13 0	82.09	85.13	88.31	91.67	.....	.....
13 30	81.99	85.04	88.21	91.56	.....	.....
14 0	82.13	85.17	88.35	91.71	.....	.....
14 30	82.39	85.44	88.63	92.01	95.52	.....
15 0	82.47	85.52	88.71	92.09	95.60	.....

1895 FEBRUARY 26. ZONE 96. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.6	8.3	10.3	12.1	13.8	16.3	a	39 41.82	306 24 10.0 9.3	III 42.275	4 39 21.26	−14 38 10.15	−14 951
2	8.9	0.4	2.5	4.2	6.2	8.5	a	41 34.08	305 54 10.0 7.3	I 47.660	4 41 13.44	15 6 29.42	15 858
3	......	58.1	27.3	29.5	33.9	57.0	a_1 e_1	42 31.61	307 16 10.0 5.1	III 43.920	4 42 11.12	13 45 39.61	13 972
4	8.3	48.6	50.7	52.5	18.0	......	a_1 c_1	47 22.25	306 16 10.0 7.8	I 44.810	4 47 1.60	14 45 25.26	14 981
5	9.0	11.4	13.5	15.5	17.3	19.6	a	12 45.18	306 0 10.0 6.4	I 41.690	5 12 24.33	15 2 37.31	15 995
6	8.9	45.6	47.6	49.7	52.0	54.3	c	12 49.84	306 0 “ “	III 37.705	5 12 28.98	15 3 54.35	15 996
7	8.4	10.7	12.7	14.6	16.4	18.8	a	15 44.45	305 18 10.0 6.7	III A 36.980	5 15 23.50	15 42 56.59	15 1014
8	7.5	3.2	5.3	7.2	9.0	11.2	a	17 36.73	307 8 10.0 7.5	I A 42.070	5 17 15.98	13 51 14.08	13 1135
9	8.7	35.3	37.4	39.6	41.8	43.9	c	17 39.60	307 8 “ “	V B 39.465	5 17 18.82	13 58 33.13	14 1107
10	8.0	52.0	54.0	55.8	57.7	0.0	a	22 25.46	307 8 “ “	I B 45.080	5 22 4.66	−13 56 46.72	−13 1152
11	8.9	43.5	45.6	47.4	49.3	51.5	a	23 17.02	307 8 “ “	I 48.130	5 22 56.22	−13 52 34.75	−13 1157
12	9.2	21.1	23.3	25.1	26.9	29.2	a	24 54.73	306 54 10.0 4.0	I B 35.730	5 24 33.88	14 13 49.56	14 1146
13	9.3	56.6	58.5	0.4	2.1	4.4	a	26 29.99	306 54 “ “	I A 39.710	5 26 9.14	14 6 5.54	14 1156
14	9.1	9.9	12.1	13.8	15.8	18.0	a	29 43.62	306 14 10.0 5.5	I B 40.360	5 29 22.67	14 52 23.82	14 1170
15	9.3	31.9	34.0	36.0	37.6	40.0	a	31 5.58	306 14 “ “	I A. 41.070	5 30 44.64	14 45 42.43	14 1177
16	8.5	22.6	24.7	26.4	28 3	30.7	a	31 56.10	307 8 10.0 5.1	III 46.670	5 31 35.26	13 53 8.15	13 1192
17	9.2	39.3	41.3	43.2	45.0	47.5	a	33 12.96	306 12 10.0 3.0	I B 41.010	5 32 51.99	14 54 14.20	14 1187
18	8.0	50.0	52.1	54.2	56.5	58.6	c	33 54.28	306 12 “ “	III 47.725	5 33 33.32	14 48 52.26	14 1190
19	9.1	54.9	57.0	58.9	0.9	2.6	e	34 29.40	307 10 10.0 4.6	VII A 40.850	5 34 8.54	13 49 46.50	13 1201
20	9.1	5.6	7.8	9.7	11.7	13.5	e	35 40.19	307 10 “ “	V B 44.400	5 35 19.32	−13 55 7.49	−13 1209
21	9.1	2.6	4.8	6.5	8.4	10.7	a	37 36.19	306 54 10.0 5.0	I A 41.910	5 37 15.28	−14 5 27.60	−14 1210
22	9.4	58.1	0.3	2.5	4.6	6.8	c	38 2.46	306 54 “ “	III C 45.050	5 37 41.54	14 14 9.25	14 1211
23	7.9	21.0	23.2	24.9	26.9	29.2	a	39 54.69	306 28 10.0 7.1	I 46.250	5 39 33.72	14 33 19.86	14 1224
24	8.9	52.5	54.6	56.3	58.3	0.6	a	41 26.18	305 58 10.0 3.5	I B 50.265	5 41 5.14	15 5 20.51	15 1152
25	9.4	25.7	27.7	29.9	32.1	34.2	c	41 29.92	305 58 “ “	III C 53.450	5 41 8.88	15 7 31.81	15 1153
26	9.0	23.7	25.8	27.8	30.2	32.5	c	42 28.00	305 58 “ “	III 53.680	5 42 6.97	15 1 2.06	15 1162
27	7.0	54.0	55.8	57.7	59.6	1.9	a	44 27.42	306 42 10.0 7.3	III 41.580	5 44 6.46	14 20 51.24	14 1243
28	9.6	56.9	59.0	0.9	2.8	5.1	a	46 30.55	306 54 10.0 5.4	I B 39.400	5 46 9.58	14 12 47.75	14 1257
29	8.9	51.9	53.9	56.1	58.3	0.4	c	46 56.12	306 54 “ “	III 43.905	5 46 35.16	14 8 8.13	14 1259
30	8.0	12.6	14.7	16.5	18.4	20.6	a	49 46.16	306 58 10.0 6.0	I B 39.100	5 49 25.18	−14 8 54.49	−14 1272
31	8.8	23.5	25.4	27.3	29.2	31.4	a	50 56.93	306 58 “ “	I A 46.810	5 50 35.96	−13 59 58.67	−14 1277
32	5.0	59.3	2.0	3.5	7.8	9.8	b_1 c_2	52 12.02	306 50 10.0 4.7	I 47.100	5 51 51.02	14 11 9.08	14 1286
33	8.7	34.4	36.5	38.6	42.9	44.5	c_3 d_2	53 34.38	306 50 “ “	VI 40.680	5 53 13.38	14 13 13.91	14 1292
34	8.6	33.5	35.6	37.7	39.9	42.1	c	54 37.76	306 50 “ “	III 41.775	5 54 16.74	14 12 52.86	14 1297
35	8.9	29.0	31.2	32.9	34.8	37.1	a	56 2.60	306 50 “ “	I 48.015	5 55 41.58	14 10 53.20	14 1302
36	9.1	......	......	......	......	......	......	......	306 38 10.0 5.4	I 45.440	6 11 24	14 23 49.54	14 1379
37	8.9	......	......	......	......	......	......	......	306 38 “ “	I B 43.665	6 12 43	14 27 38.06	14 1387
38	8.2	......	......	......	......	......	......	......	306 28 10.0 6.7	I 46.330	6 13 57	14 33 33.42	14 1396
39	9.2	......	......	......	......	......	......	......	306 28 “ “	I B 44.345	6 14 58	14 37 25.81	14 1403
40	8.9	......	......	......	......	......	......	......	307 0 10.0 3.6	I C 42.890	6 15 55	−14 9 7.59	−14 1409
41	8.1	......	......	......	......	......	......	......	307 0 “ “	I A 41.100	6 16 46	−14 0 0.41	−13 1457
42	9.0	18.3	20.3	22.1	24.0	26.3	a	19 51.83	306 40 10.0 5.0	I B 42.390	6 19 30.68	14 26 5.53	14 1429
43	8.0	16.2	18.3	20.1	22.0	24.2	a	20 49.79	306 40 “ “	I B 39.915	6 20 28.62	14 26 53.46	14 1432
44	8.5	54.5	56.7	58.8	1.0	3.2	c	20 58.84	306 40 “ “	III 46.445	6 20 37.70	14 21 34.82	14 1436
45	9.0	57.2	59.4	1.4	3.6	5.6	c	22 1.44	306 40 “ “	III B 43.120	6 21 40.28	14 25 52.87	14 1442
46	9.1	0.1	2.3	15.1	17.9	19.5	a_4 b_3	24 27.90	306 58 10.0 1.6	I 46.720	6 24 6.78	14 3 31.41	14 1462
47	......	59.1	1.2	3.3	5.6	11.9	c_1 d_1	25 3.37	306 58 “ “	III C 49.810	6 24 42.24	14 8 59.60	14 1467
48	8.8	23.3	25.5	27.3	29.2	31.5	a	27 56.94	306 58 “ “	I 44.950	6 27 35.80	14 4 6.84	14 1486
49	8.7	25.9	27.8	29.7	31.5	33.8	a	28 59.31	306 58 “ “	I A 43.720	6 28 38.18	14 1 16.42	13 1542
50	8.9	0.4	2.5	4.4	6.2	8.5	a	29 33.99	306 58 “ “	III 39.425	6 29 12.84	−14 5 54.07	−14 1493
51	9.2	15.6	17.7	19.5	21.4	23.6	a	30 49.12	307 10 10.0 4.1	I B 44.010	6 30 27.98	−13 55 38.21	−13 1553
52	9.1	56.4	58.3	0.1	2.0	4.2	a	31 29.75	307 10 “ “	III 45.510	6 31 8.62	13 51 56.35	13 1559
53	8.8	46.6	48.7	50.5	52.3	54.8	a	33 20.14	307 6 10.0 4.7	I A 38.725	6 32 59.00	13 54 52.22	13 1574
54	8.9	20.5	22.5	24.3	26.3	28.5	a	33 53.99	307 6 “ “	I B (40).905	6 33 32.84	14 0 38.96	13 1580
55	9.1	13.2	15.2	17.0	19.0	21.2	a	34 46.69	307 6 “ “	I B 50.070	6 34 25.54	13 57 43.44	13 1587
56	6.0	59.3	1.5	3.7	5.8	7.9	c	35 3.64	307 6 “ “	V C 42.510	6 34 42.48	14 3 21.85	14 1525
57	9.3	43.2	45.5	47.6	49.8	52.0	c	35 47.62	307 6 “ “	V 38.600	6 35 26.46	13 58 11.00	13 1597
58	9.3	29.9	31.9	33.8	35.7	38.0	a	37 3.42	307 6 “ “	III A 45.045	6 36 42.28	13 52 52.83	13 1608
59	7.9	22.5	24.4	26.3	28.2	30.5	a	37 56.10	305 56 10.0 6.1	III 42.740	6 37 34.81	15 6 54.56	15 1479
60	8.7	26.1	28.0	29.9	32.0	34.1	a	38 59.79	305 38 10.0 5.1	I 44.060	6 38 38.46	−15 24 30.57	−15 1483
61	9.3	43.8	45.9	48.2	50.3	52.3	c	42 48.10	306 4 10.0 4.1	V 41.940	6 42 26.81	−14 59 12.91	−14 1587
62	9.3	12.2	14.3	16.1	17.8	20.3	a	44 45.71	307 6 10.0 6.3	I B 39.820	6 44 24.52	14 1 3.54	13 1668
63	9.2	55.9	57.9	59.7	1.4	3.8	a	45 29.30	307 6 “ “	I A 38.275	6 45 8.12	13 55 5.18	13 1674
64	8.6	39.6	41.5	43.4	45.3	47.5	a	46 13.03	307 6 “ “	III B 43.680	6 45 51.84	13 59 50.47	13 1682
65	8.5	32.2	33.8	38.0	40.1	42.4	b_2 c_3	46 42.29	306 54 10.0 7.5	III 43.090	6 46 21.08	−14 8 48.15	−14 1614

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
66	9.0	25.2	27.2	29.2	31.0	33.4	a	47 58.93	305 56 10.0 2.0	III B 46.170	6 47 37.60	−15 9 8.75	−15 1545
67	8.7	28.2	30.6	32.6	34.5	36.4	e	48 2.83	305 56 " "	V 48.180	6 47 41.50	15 5 16.78	15 1546
68	8.9	32.2	34.4	36.4	38.6	40.7	c	49 36.46	307 8 10.0 7.5	III 45.400	6 49 15.26	13 54 4.41	13 1712
69	9.0	29.3	32.0	33.5	37.8	39.9	b_1 c_2	55 42.08	305 56 10.0 3.8	I 45.750	6 55 20.85	15 6 4.79	15 1594
70	8.6	8.3	10.3	12.5	14.7	16.9	c	56 12.54	305 56 " "	III 42.475	6 55 51.31	−15 7 8.40	−15 1597
71	8.9	25.8	27.8	29.5	31.4	33.7	a	57 59.25	306 50 10.0 5.1	III 42.460	6 57 38.00	−14 13 6.30	−14 1689
72	9.0	1.0	3.0	5.3	7.4	9.6	c	58 5.26	306 50 " "	V 37.930	6 57 44.00	14 14 33.62	14 1690
73	9.1	13.3	15.3	17.3	19.6	21.7	c	2 17.44	306 0 10.0 4.2	III 42.290	7 1 56.09	15 3 14.05	14 1716
74	9.3	49.0	51.2	53.3	55.6	57.6	c	2 53.34	306 0 " "	III 38.620	7 2 31.99	15 4 24.73	15 1651
75	9.2	21.6	23.6	25.8	28.1	30.3	c	3 25.88	306 0 " "	III B 42.010	7 3 4.52	15 6 33.69	15 1654
76	8.4	44.1	45.6	49.6	51.9	54.0	b_2 c_3	4 54.04	306 46 10.0 6.5	III 46.200	7 4 32.78	14 15 56.83	14 1734
77	9.4	31.4	32.9	36.9	39.2	41.3	b_2 c_3	5 41.34	306 46 " "	III 46.450	7 5 20.08	14 15 52.33	14 1741
78	9.1	53.0	55.1	57.3	59.5	1.5	c	5 57.28	306 46 " "	V B 39.510	7 5 36.00	14 21 19.66	14 1743
79	8.8	25.9	28.0	29.7	31.6	33.7	a	8 59.48	306 6 10.0 5.5	I 47.470	7 8 38.14	14 55 35.88	14 1775
80	9.3	6.0	8.1	10.4	12.4	14.5	c	9 10.28	306 6 " "	V C 51.300	7 8 48.93	−15 0 49.58	−14 1777
81	9.5	19.5	21.6	23.9	28.0	29.8	c_3 d_2	10 19.56	307 4 10.0 5.4	VI 46.070	7 9 58.32	−13 58 1.73	−13 1895
82	8.8	47.4	49.5	51.6	53.9	56.0	c	11 51.68	307 4 " "	III A 41.240	7 11 30.44	13 56 19.88	13 1906
83	8.7	32.6	34.3	38.3	40.4	42.6	b_2 c_2	12 42.63	307 4 " "	III A 42.020	7 12 21.38	13 56 5.25	13 1916
84	9.0	17.8	19.4	23.5	25.7	27.8	b_2 c_3	13 27.83	306 56 10.0 6.0	III 40.510	7 13 6.56	14 7 49.26	14 1814
85	9.1	35.6	37.6	41.8	43.6	46.1	c_4 d_3	13 33.39	306 56 " "	VI A 39.010	7 13 12.14	14 5 3.54	14 1815
86	9.1	55.2	57.3	59.4	1.4	3.1	e	14 29.79	306 56 " "	VII A 43.010	7 14 8.52	14 3 47.11	13 1935
87	6.0	10.7	12.9	14.7	16.6	18.7	a	16 44.32	306 52 10.0 5.8	III 45.080	7 16 23.04	14 10 23.14	14 1846
88	9.0	54.9	57.0	59.1	1.2	3.4	c	16 59.12	306 52 " "	III 45.270	7 16 37.84	14 10 19.59	14 1853
89	9.3	11.0	13.3	15.4	17.2	19.1	e	17 45.60	306 8 10.0 8.0	VII 47.090	7 17 24.24	14 53 46.25	14 1861
90	9.2	34.9	37.0	38.9	40.6	43.0	a	20 8.45	307 6 10.0 6.3	I B 41.990	7 19 47.18	−14 0 36.30	−13 1990
91	8.9	31.1	33.4	35.5	37.8	39.8	c	20 35.52	307 6 " "	III 47.680	7 20 14.26	−13 55 33.90	−13 1996
92	8.0	31.5	32.9	37.1	39.4	41.4	b_2 c_3	21 41.45	307 6 " "	III B 47.590	7 21 20.18	13 58 49.84	13 2008
93	9.0	13.9	16.1	17.9	19.9	21.7	e	21 48.43	307 6 " "	VII 46.605	7 21 27.16	13 55 55.57	13 2009
94	9.6	38.1	40.1	41.9	43.8	46.2	a	25 11.72	306 6 10.0 6.1	I 42.830	7 24 50.35	14 57 11.09	14 1926
95	8.0	35.1	37.3	39.4	41.5	43.8	c	25 39.42	306 54 10.0 6.1	III 43.230	7 25 18.14	14 9 1.91	14 1928
96	9.4	9.5	11.7	13.7	15.6	17.5	e	25 44.10	306 54 " "	V 44.130	7 25 22.82	14 8 45.04	14 1929
97	9.1	12.7	14.8	16.5	18.5	20.8	a	27 46.29	306 36 10.0 6.1	I 43.370	7 27 24.96	14 27 0.37	14 1950
98	9.5	12.5	14.0	18.3	20.4	22.5	b_2 c_3	28 22.53	306 52 10.0 5.9	III 42.850	7 28 1.24	14 11 10.47	14 1956
99	6.8	3.2	5.3	7.4	9.6	11.7	c	29 7.44	306 52 " "	III A 44.570	7 28 46.15	14 7 23.05	14 1966
100	9.1	36.3	38.5	42.7	44.3	46.9	c_4 d_3	29 34.16	305 58 10.0 7.2	VI 44.390	7 29 12.77	−15 4 43.70	−14 1973
101	8.8	9.9	12.0	13.8	15.7	18.0	a	37 43.48	306 52 10.0 6.2	I 45.575	7 37 22.18	−14 10 21.08	−14 2138
102	9.1	11.6	13.2	17.2	19.6	21.6	b_2 c_3	38 21.63	307 2 10.0 6.0	III (B) 45.120	7 38 0.34	14 3 44.00	13 2182
103	9.2	52.0	54.2	56.2	58.0	59.9	e	38 26.57	307 2 " "	V C 45.060	7 38 5.28	14 6 57.96	14 2158
104	7.0	8.4	10.5	12.5	14.1	16.3	a	41 41.98	306 44 10.0 6.5	I 42.870	7 41 20.66	14 19 14.72	14 2199
105	9.1	49.0	51.0	52.8	54.8	57.0	a	42 22.53	306 44 " "	III A 39.260	7 42 1.22	14 17 10.09	14 2203
106	8.8	5.9	7.9	10.2	12.4	14.5	c	43 10.18	306 44 " "	III 34.760	7 42 48.84	14 21 51.42	14 2211
107	8.8	11.8	13.8	15.7	17.5	19.8	a	44 45.34	306 44 " "	I 34.790	7 44 24.00	14 21 50.92	14 2223
108	9.5	24.5	26.0	30.2	32.3	34.5	b_2 c_3	45 34.50	306 44 " "	III B 40.030	7 45 13.16	14 23 25.01	14 2230
109	9.0	26.4	28.5	30.5	32.1	34.5	a	50 0.01	306 48 10.0 7.4	I 41.680	7 49 38.70	14 15 40.02	14 2268
110	9.2	15.0	16.9	18.8	20.6	23.0	a	50 48.48	306 40 10.0 7.1	III 46.400	7 50 27.14	−14 22 10.79	−14 2274
111	9.1	6.4	8.6	10.7	12.9	15.0	c	51 10.72	306 40 " "	III C 49.820	7 50 49.38	−14 27 32.04	−14 2275
112	8.9	23.1	25.2	27.2	29.1	31.1	e	51 57.57	306 26 10.0 6.4	V 40.450	7 51 36.22	14 38 6.79	14 2281
113	9.2	37.0	39.9	40.7	42.6	45.0	a	54 10.51	306 26 10.0 7.1	I C 40.465	7 53 49.15	14 44 33.32	14 2308
114	9.0	......	4.5	6.3	8.1	10.5	a	54 36.02	306 26 " "	III A 41.380	7 54 14.68	14 34 34.49	14 2310
115	9.4	10.7	12.7	14.4	16.2	18.6	a	56 44.10	306 56 10.0 3.7	I A 43.860	7 56 22.80	14 3 47.66	13 2344
116	9.0	44.6	46.8	48.9	51.2	53.3	c	56 48.96	306 56 " "	III C 42.205	7 56 27.64	14 14 0.63	14 2326
117	9.0	50.4	52.4	54.2	56.1	58.4	a	58 23.98	306 18 10.0 6.3	III 40.680	7 58 2.62	14 46 4.78	14 2342
118	9.3	38.9	40.9	43.1	45.2	47.5	c	59 43.12	306 26 10.0 6.6	III 42.940	7 59 21.77	14 37 21.36	14 2351
119	9.1	20.5	22.8	24.9	27.0	29.2	c	0 24.88	306 26 " "	III 44.690	8 0 3.52	14 36 48.01	14 2355
120	8.7	32.0	34.1	36.0	38.1	39.9	e	1 6.54	307 2 10.0 6.0	....	8 0 45.26	−14 0 0	−13 2380
121	......	28.4	30.0	34.1	36.3	38.5	b_2 c_3	2 38.45	307 2 " "	III 45.590	8 2 17.16	−14 0 30.18	−13 2391

Reduction Elements. Zone 96.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
February 26.2....	−0.005	+0.084	+0.170	−0.028	+0.176	+0.201
26.4....	−0.050	+0.268	+0.232			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		o^1 Eridani		*A* Eridani		Lalande 8205		53 Eridani		ε Leporis		α Canis Majoris	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		313 54 9.70		310 30 9.10		300 10 8.00		306 32 7.30		298 32 8.35		304 28 8.30	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	47.795	6 30.13		6 16.69	41.335	4 25.79	42.960	4 57.60	43.730	5 12.06	43.775	5 13.46
II	Red. to Mer.	.815	0.07		0.10	.295	0.21	43.020	0.14	.735	0.22	.825	0.16
VI	Inclination	.845		47.120	−0.45	.380		.010		.780		.855	
VII	Refraction	.860	1 2.1	.135	1 10.0	.370	1 42.7	.025	1 20.8	.785	1 51.0	.870	1 27.7

		γ Canis Majoris		9 Navis		ι Navis	
		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		305 34 7.30		307 26 8.50		297 2 7.70	
		r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.		4 51.00	40.670	4 13.92		5 57.98
II	Red. to Mer.	42.630	0.13	.750	0.13		0.24
VI	Inclination	.690	−0.18	.725		46.160	−0.45
VII	Refraction	.660	1 24.3	.760	1 18.9	.145	1 57.9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
o^1 Eridani	4 7 18.50	10	+0.24	−33.80	313 59 37.8	18.8
A Eridani	4 9 58.11	10	+0.24	−33.82	310 35 15.4	18.1
Lalande 8205	4 16 38.36	11	+0.25	−33.83	300 12 51.3	19.3
53 Eridani	4 33 56.53	11	+0.25	−33.84	306 35 44.2	20.1
ε Ursae Minoris s. p.	4 57 15.57	11	+0.80	[−33.97]	58 50	....
ε Leporis	5 1 35.28	11	+0.25	−33.75	298 35 29.6	18.0
α Canis Majoris	6 41 6.27	8	+0.25	−33.88	304 31 54.2	17.1
51 H. Cephei	6 52 16.61	5	−1 26	[−34.37]	48 16	....
γ Canis Majoris	6 59 35.41	11	+0.25	−33.83	305 37 33.9	19.0
9 Navis	7 47 29.75	11	+0.24	−33.89	307 29 3.7	18.1
ι Navis	8 3 39.49	11	+0.25	−33.87	297 6 7.6	19.4

h 4.434	*dt*		s −33.808
	Hourly rate		−0.0204
	Adopted Equator Point		° ′ ″ 321 6 18.66

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 15	30.080	38.2	37.1
5 10	30.092	36.9	35.7
5 55	30.092	35.1	34.3
7 2	30.090	33.6	33.4
8 5	30.086	33.1	32.7

Note.
79. Faint companion s. p.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1895.0			
			305°	306°	307°	308°	305°	306°	307°	308°
°	s	h m	s	s	s	s	″	″	″	″
305	−0.247	4 30	......	+13.016	+13.131	+13.244	....	+1.76	+1.47	+1.18
306	0.246	5 0	+12.675	12.794	12.913	13.029	+2.13	1.84	1.56	1.27
307	0.245	5 30	12.482	12.605	12.724	12.847	2.28	2.02	1.74	1.46
308	−0.245	6 0	12.329	12.450	12.573	12.693	2.53	2.27	2.01	1.75
		6 30	12.215	12.336	12.455	12.574	2.88	2.64	2.40	2.16
		7 0	+12.143	12.261	12.377	12.490	+3.28	3.07	2.85	2.63
		7 30	......	12.228	12.337	12.447	....	3.57	3.39	3.19
		8 0	......	12.237	12.339	12.441	....	4.15	3.99	3.82
		8 30	......	+12.287	+12.381	+12.473	....	+4.77	+4.65	+4.53

APPARENT RIGHT ASCENSION.	*R*			
	305°	306°	307°	307° 30′
h m	″	″	″	″
4 30	85.70	82.62	79.67	78.25
5 0	85.84	82.76	79.80	78.38
5 30	86.00	82.91	79.95	78.52
6 0	86.16	83.06	80.09	78.67
6 30	86.24	83.14	80.17	78.74
7 0	86.32	83.21	80.24	78.81
7 30	86.38	83.27	80.30	78.87
8 0	86.44	83.33	80.35	78.92

1895 MARCH 5. ZONE 97. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	...	21.8	24.0	26.1	28.3	30.4	c	0 26.12	305	56	10.0	7.9	III	46.350	5 0 3.81	−15 5 9.39	15 938
2	...	48.5	50.6	52.6	54.5	56.3	e	3 23.00	306	54	10.0	8.5	VII	46.345	5 3 0.80	14 7 8.35	14 1051
3	...	55.5	57.6	59.6	1.4	3.5	e	4 29.81	305	24	10.0	7.5	V	46.510	5 4 7.41	15 37 10.01	15 952
4	...	....	20.4	22.4	24.3	26.3	e	5 52.53	304	54	10.0	7.1	V C	47.180	5 5 30.05	16 13 25.60	16 1056
5	...	20.9	23.0	25.1	27.4	29.5	c	13 25.18	305	18	10.0	8.1	V	43.530	5 13 2.72	15 44 10.97	15 999
6	8.7	22.2	24.3	26.4	28.5	30.6	c	14 26.40	307	8	10.0	8.7	III	43.010	5 14 4.16	13 54 15.75	13 1121
7	8.3	11.2	13.4	15.5	17.8	19.9	c	15 15.56	306	10	10.0	9.6	III	42.960	5 14 53.19	14 52 19.16	14 1094
8	9.0	12.5	14.7	16.8	19.0	21.0	c	16 16.80	304	58	10.0	9.7	III C	43.390	5 15 54.27	16 10 41.41	16 1107
9	9.3	19.6	21.7	23.8	25.8	27.6	e	16 53.93	304	58	“	“	VII	46.600	5 16 31.41	16 3 13.85	16 1111
10	9.3	3.4	5.5	7.7	9.8	12.0	c	18 7.68	304	58	“	“	V B	45.990	5 17 45.14	−16 6 39.56	−16 1117
11	9.4	57.8	59.9	1.9	4.0	5.7	e	18 32.10	304	58	“	“	VII A	43.720	5 18 9.56	−16 0 54.63	−16 1118
12	8.3	3.2	5.4	7.6	9.9	12.0	c	20 7.62	304	58	“	“	III B	41.560	5 19 45.07	16 8 5.18	16 1129
13	8.0	27.8	29.9	31.7	33.6	35.9	a	22 1.57	305	28	10.0	10.0	III	46.170	5 21 39.07	15 33 22.14	15 1035
14	9.3	6.8	9.2	11.2	13.6	15.6	c	22 11.28	305	28	“	“	V	48.190	5 21 48.78	15 32 43.81	15 1036
15	9.3	57.6	59.8	1.8	3.7	5.5	e	22 31.98	305	28	“	“	V	45.810	5 22 9.48	15 33 29.64	15 1038
16	9.1	40.4	42.4	44.4	46.3	48.4	a	25 14.14	305	40	10.0	9.5	I A	44.350	5 24 51.65	15 18 43.12	15 1053
17	9.3	29.0	31.2	32.9	34.8	37.1	a	26 2.77	305	40	“	“	III C	48.970	5 25 40.26	15 26 56.54	15 1058
18	...	20.3	22.6	24.7	26.9	28.9	c	26 24.68	305	40	“	“	III B	49.900	5 26 2.18	15 23 25.89	15 1060
19	9.6	24.9	27.0	29.0	31.0	32.9	e	26 59.29	305	40	“	“	V (B)	46.350	5 26 36.78	15 24 34.51	15 1064
20	8.1	15.0	17.1	19.2	21.4	23.6	c	31 19.26	305	10	10.0	8.3	III A	46.290	5 30 56.69	−15 48 10.79	−15 1089
21	8.6	0.8	2.9	5.2	7.4	9.5	c	32 5.16	305	10	“	“	III	(41).235	5 31 42.57	−15 53 2.83	−15 1094
22	8.7	0.9	3.0	5.1	7.3	9.4	c	34 5.14	306	44	10.0	9.0	III C	45.980	5 33 42.72	14 23 54.39	14 1191
23	9.2	32.4	34.4	38.7	40.3	42.8	c_4 d_3	34 30.17	306	44	“	“	VI A	40.690	5 34 7.78	14 15 55.09	14 1195
24	9.3	30.4	32.5	34.6	36.8	39.0	c	35 34.66	305	48	10.0	9.1	V	46.170	5 35 12.14	15 13 27.76	15 1111
25	9.3	48.0	50.2	52.3	54.4	56.6	c	36 52.30	305	36	10.0	8.4	III	44.610	5 36 29.74	15 25 58.82	15 1121
26	7.8	22.7	24.8	27.2	29.3	31.4	c	37 27.08	305	36	“	“	V A	43.085	5 37 4.52	15 23 13.78	15 1125
27	9.0	16.7	18.9	20.8	22.8	24.6	e	37 51.01	305	6	10.0	8.0	VII	40.620	5 37 28.38	15 57 17.96	15 1128
28	9.4	37.6	39.8	41.9	44.1	46.2	c	39 41.92	305	36	10.0	7.9	III	42.030	5 39 19.34	15 26 49.79	15 1138
29	9.3	3.3	5.6	7.6	9.8	11.9	c	40 7.64	305	36	“	“	III A	42.185	5 39 45.07	15 23 32.30	15 1142
30	8.6	27.2	29.4	31.6	33.8	35.8	c	41 31.56	306	12	10.0	9.4	III	48.145	5 41 9.05	−14 48 50.79	−14 1228
31	...	43.6	45.7	47.8	50.0	52.2	c	42 47.86	306	12	“	“	III B	49.790	5 42 25.34	−14 51 33.54	−14 1232
32	9.1	40.5	42.8	44.6	46.6	48.5	e	43 14.91	305	32	10.0	8.5	V	47.130	5 42 52.31	15 29 13.66	15 1167
33	9.3	57.2	59.3	1.4	3.5	5.8	c	45 1.44	306	2	10.0	7.8	III	47.140	5 44 38.89	14 59 12.80	15 1175
34	9.2	59.5	1.8	3.5	5.3	7.6	a	46 33.39	305	0	10.0	7.7	I	45.260	5 46 10.71	16 1 51.98	16 1271
35	9.2	50.6	52.2	56.3	58.5	0.6	b_2 c_3	47 0.68	305	0	“	“	III A	39.800	5 46 38.00	16 0 22.80	16 1274
36	9.3	31.0	33.2	35.0	37.0	38.9	e	47 5.26	305	0	“	“	V A	38.410	5 46 42.58	16 0 49.67	16 1275
37	9.0	5.7	7.8	10.0	12.3	14.5	c	48 10.06	305	0	“	“	III A	41.610	5 47 47.37	15 59 48.57	16 1284
38	9.6	12.8	15.1	17.0	19.4	21.6	c	49 17.18	305	0	“	“	V	48.210	5 48 54.49	16 0 57.44	16 1290
39	8.6	55.3	57.4	59.5	1.4	3.2	e	49 29.60	305	0	“	“	V	45.800	5 49 6.91	16 1 43.76	16 1294
40	9.7	6.7	8.8	11.0	13.1	17.4	c_2 d_1	51 8.83	305	34	10.0	8.4	V	40.670	5 50 46.20	−15 29 20.97	−15 1215
41	9.4	54.7	56.9	58.7	0.6	2.4	e	51 28.97	305	34	“	“	VII B	46.830	5 51 6.33	−15 30 36.63	−15 1216
42	9.3	22.2	24.4	26.4	28.3	30.0	e	51 56.58	305	34	“	“	VII	50.650	5 51 33.95	15 26 9.94	15 1220
43	8.0	27.2	29.4	31.7	33.8	36.0	c	53 31.62	305	34	“	“	V A	44.020	5 53 8.99	15 25 2.74	15 1226
44	9.3	10.9	13.0	15.1	17.0	19.0	e	53 45.30	305	34	“	“	VII C	44.660	5 53 22.65	15 34 31.36	15 1228
45	8.2	34.6	36.8	39.0	41.1	43.2	c	55 38.94	305	18	10.0	8.4	III B	40.590	5 55 16.25	15 48 38.61	15 1238
46	9.4	43.5	45.6	47.8	50.0	52.0	c	56 47.78	305	18	“	“	III	47.340	5 56 25.09	15 43 15.77	15 1243
47	9.4	3.8	5.9	7.9	10.2	12.3	c	58 8.02	305	18	“	“	III A	41.030	5 57 45.33	15 42 2.75	15 1253
48	9.4	54.9	57.1	59.4	1.6	3.6	c	58 59.32	305	18	“	“	III	45.360	5 58 36.62	15 43 54.68	15 1258
49	8.4	54.6	56.8	59.0	1.2	3.3	c	59 58.98	305	18	“	“	III A	45.530	5 59 36.28	15 40 37.17	15 1261
50	9.2	24.0	26.1	28.3	30.6	32.6	c	2 28.32	305	52	10.0	8.0	III A	43.300	6 2 5.68	−15 7 19.61	−15 1269
51	9.1	15.4	17.6	19.7	21.9	24.0	c	3 19.72	305	52	“	“	III B	39.610	6 2 57.06	−15 14 59.28	−15 1272
52	8.9	37.5	39.6	41.7	44.0	46.1	c	3 41.78	305	52	“	“	V	41.490	6 3 19.13	15 11 9.91	15 1274
53	9.3	14.8	17.0	19.0	21.3	23.4	c	5 19.10	306	0	10.0	8.5	III B	43.240	6 4 56.45	15 5 49.85	15 1285
54	8.0	3.7	5.8	7.9	10.0	12.1	c	6 7.90	306	0	“	“	III	43.860	6 5 45.25	15 2 24.51	15 1292
55	8.0	10.5	12.6	14.8	17.1	....	c	7 14.82	305	16	10.0	7.9	III	44.565	6 6 52.08	15 46 13.80	15 1299
56	9.5	27.5	29.6	31.8	36 0	37.7	c_3 d_2	7 27.48	305	16	“	“	VI B	47.870	6 7 4.73	15 48 24.55	15 1301
57	9.2	49.9	51.3	55.5	57.7	59.9	b_2 c_3	8 59.88	305	38	10.0	8.3	III B	42.800	6 8 37.18	15 28 0.99	15 1311
58	9.2	27.2	29.4	31.4	33.4	35.0	e	9 1.61	305	38	“	“	VII A	37.365	6 8 38.92	15 23 16.87	15 1312
59	8.8	58.5	0.7	2.6	4.6	6.5	e	9 32.90	305	38	“	“	VII	40.607	6 9 10.20	15 25 30.05	15 1315
60	9.1	13.8	16.0	18.1	20.4	22.4	c	11 18.14	305	16	10.0	8.0	V	45.670	6 10 55.39	−15 45 54.64	−15 1320
61	9.3	17.4	19.6	21.8	23.8	26.1	c	12 21.74	305	54	10.0	8.5	III C	43.040	6 11 59.05	−15 15 9.91	15 1327
62	8.6	41.4	43.7	45.8	50.0	51.7	c_1 d_2	12 41.50	305	54	“	“	VI A	43.240	6 12 18.83	15 5 24.90	15 1328
63	7.6	35.5	37.7	39.8	42.0	44.2	c	14 39.84	306	4	10.0	9.4	III	41.795	6 14 17.17	14 59 7.13	14 1403
64	9.0	36.2	38.4	40.5	42.6	44.7	c	15 40.48	306	4	“	“	III B	44.470	6 15 17.80	15 1 30.01	15 1346
65	9.0	33.3	35.4	37.6	39.8	41.9	c	16 37.60	305	10	10.0	8.6	III	46.420	6 16 14.82	15 51 42.11	15 1353
66	9.1	54.3	56.4	58.6	0.7	2.8	c	17 58.56	306	30	10.0	12.0	III	44.145	6 17 35.93	[14 32 20.95]	14 1418
67	9.4	48.7	50.9	53.0	55.2	57.2	c	18 53.00	306	14	10.0	8.4	V (B)	45.900	6 18 30.33	14 51 4.22	−14 1422

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
68	8.0	34.2	36.6	38.4	40.5	42.2	e	19 8.80	306 14 10.0 8.4	V 48.410	6 18 46.17	−14 47 2.48	−14 1423
69	8.2	10.3	12.4	14.7	16.8	18.8	c	20 14.60	306 14 " "	III 49.100	6 19 51.93	14 46 49.34	14 1430
70	9.3	57.0	59.2	1.2	3.5	5.6	c	21 1.30	306 14 " "	V A 45.610	6 20 38.63	−14 44 42.08	−14 1437
71	9.1	53.9	56.0	58.2	0.5	2.6	c	21 58.24	304 54 10.0 9.0	III 44.060	6 21 35.40	−16 8 30.26	−16 1481
72	8.2	9.0	11.2	13.4	15.6	17.7	c	23 13.38	305 48 10.0 9.0	III 41.410	6 22 50.64	15 15 19.07	15 1388
73	8.1	24.2	26.4	28.6	30.7	32.8	c	23 28.54	305 48 " "	V 43.405	6 23 5.81	15 14 41.26	15 1390
74	9.1	12.7	14.9	17.1	19.2	21.3	c	24 17.04	305 48 " "	III B 41.740	6 23 54.30	15 18 26.98	15 1396
75	8.8	48.9	51.2	53.3	55.5	57.6	c	25 53.30	305 28 10.0 7.5	III B 38.820	6 25 30.51	15 39 25.39	15 1407
76	9.1	28.9	31.0	33.2	35.4	37.5	c	27 33.20	305 28 " "	III 43.220	6 27 10.41	15 34 47.83	15 1415
77	9.4	27.8	29.9	32.0	34.3	36.4	c	28 32.08	305 28 " "	III 39.400	6 28 9.30	15 36 1.57	15 1422
78	9.1	6.2	8.3	10.5	12.7	14.9	c	30 10.52	304 54 10.0 8.3	III B 40.185	6 29 47.66	16 13 2.26	16 1526
79	9.1	37.6	39.8	41.8	44.2	46.4	c	30 41.96	304 54 " "	V A 42.600	6 30 19.11	16 5 47.74	16 1531
80	9.0	59.0	1.1	3.2	5.4	7.6	c	33 3.26	305 42 10.0 8.4	III B 40.790	6 32 40.48	−15 24 49.48	−15 1454
81	9.1	25.1	27.3	29.4	31.6	33.7	c	33 29.42	305 42 " "	V A 40.150	6 33 6.65	−15 18 33.59	−15 1456
82	9.3	40.0	42.3	44.4	46.6	48.7	c	34 44.40	306 24 10.0 8.2	III C 43.800	6 34 21.63	14 45 3.52	14 1523
83	8.8	15.7	17.8	20.0	22.1	24.3	c	35 19.98	306 24 " "	V A 46.270	6 34 57.23	14 34 35.07	14 1527
84	8.9	43.4	45.5	47.6	49.9	52.0	c	35 47.68	306 24 " "	V 41.740	6 35 24.98	14 39 17.12	14 1532
85	9.2	3.7	5.7	7.6	9.4	11.7	a	37 37.49	304 56 10.0 8.0	I 43.280	6 37 14.61	16 6 51.66	16 1572
86	9.3	42.6	44.8	46.9	49.1	51.3	c	37 46.94	304 56 " "	III B 42.650	6 37 24.06	16 10 18.20	16 1573
87	9.2	24.3	26.5	28.7	30.8	33.0	c	38 28.66	304 56 " "	III B 50.480	6 38 5.78	16 7 48.21	16 1576
88	9.1	57.1	59.3	1.4	3.5	5.5	c	39 1.36	304 56 " "	V A 44.015	6 38 38.49	16 3 24.14	16 1580
89	8.0	35.3	37.4	39.4	43.6	45.3	c_3 d_2	39 35.16	305 6 10.0 8.4	V 43.030	6 39 12.30	15 56 57.52	15 1489
90	9.3	51.5	53.7	55.8	58.0	0.1	c	42 55.82	304 58 10.0 7.5	V 43.080	6 42 32.93	−16 4 58.77	−16 1600
91	8.9	3.3	4.7	9.0	11.0	13.4	b_2 c_3	44 13.29	305 46 10.0 8.6	III A 44.815	6 43 50.50	−15 13 8.12	−15 1519^1
92	9.2	39.2	41.5	43.4	45.4	47.3	e	44 13.71	305 46 " "	V A 45.400	6 43 50.92	15 12 57.02	15 1519^2
93	9.3	7.7	9.8	12.0	13.9	15.6	e	44 42.14	305 46 " "	VI B 45.290	6 44 19.34	15 19 27.98	15 1521
94	9.3	26.6	28.9	31.0	32.9	34.6	e	45 1.15	305 46 " "	VII 46.920	6 44 38.34	15 15 43.30	15 1522
95	9.7	14.4	16.5	18.7	20.8	......	c	47 18.68	305 20 10.0 8.4	III A 41.785	6 46 55.83	15 40 8.90	15 1542
96	9.2	55.3	57.6	59.5	1.4	3.4	e	47 29.72	305 20 " "	V (44).130	6 47 6.87	15 42 39.01	15 1543
97	9.2	......	35.5	37.5	39.3	41.5	a	49 7.23	305 42 10.0 7.9	III 43.140	6 48 44.42	15 20 57.53	15 1550
98	9.3	18.3	20.5	22.7	24.9	27.1	c	1 22.70	305 38............	....	7 0 59.86	15 24 8	15 1640
99	9.4	19.7	21.8	24.0	25.8	27.6	e	1 54.04	305 8 10.0 8.0	V 46.070	7 1 31.14	15 54 8.46	15 1643^2
100	7.0	21.6	23.7	25.8	28.1	30.3	c	5 25.90	305 58 10.0 7.7	III 43.580	7 5 3.08	−15 4 55.03	−15 1671
101	9.0	39.5	41.6	43.7	45.9	48.2	c	6 43.78	305 58 " "	III 48.890	7 6 20.96	−15 3 13.71	−14 1752
102	9.2	1.8	3.9	6.0	8.2	10.3	c	8 6.04	305 28 10.0 7.0	III A 44.150	7 7 43.18	15 31 32.31	15 1694
103	9.1	15.2	17.4	19.6	21.8	24.0	c	9 19.60	305 28 " "	III B 44.410	7 8 56.72	15 37 56.29	15 1706
104	8.2	3.3	5.5	7.5	9.5	11.4	e	9 37.66	304 54 10.0 7.3	V 40.740	7 9 14.72	16 9 54.91	16 1837
105	8.0	44.3	46.5	48.7	50.9	53.0	c	11 48.68	305 0 10.0 7.2	III 41.770	7 11 25.75	16 3 35.47	15 1732
106	9.4	24.2	26.3	28.4	30.6	32.9	c	12 28.48	306 12 10.0 8.0	III B 42.670	7 12 5.68	14 54 28.38	14 1805
107	9.4	29.5	31.6	33.8	36.0	38.2	c	13 33.82	306 12 " "	III 48.510	7 13 11.03	14 49 22.95	14 1816
108	9.1	55.9	58.2	0.4	2.6	4.7	c	14 0.36	305 36 10.0 5.8	V 44.120	7 13 37.50	15 26 50.53	15 1748
109	8.8	31.0	33.2	35.4	37.5	39.7	c	15 35.36	305 58 10.0 8.0	III 44.950	7 15 12.54	15 4 32.73	14 1834
110	9.2	29.6	31.7	33.9	36.0	38.2	c	16 33.88	305 6 10.0 8.5	III 43.350	7 16 10.95	−15 57 6.07	−15 1774
111	8.8	19.7	21.2	25.3	27.7	29.8	b_2 c_3	17 29.76	305 46 10.0 8.9	III 44.790	7 17 6.91	−15 16 36.70	−15 1778
112	9.2	59.2	1.4	3.4	5.3	7.1	e	17 33.62	305 46 " "	VII B(47).000	7 17 10.77	15 19 8.41	15 1780
113	9.2	40.9	43.2	45.2	47.0	48.8	e	18 15.35	305 46 " "	VII C 45.890	7 17 52.49	15 22 42.10	15 1786
114	8.6	9.4	11.4	13.6	15.8	18.0	c	21 13.64	306 0 10.0 8.3	III 45.450	7 20 50.81	15 2 25.12	14 1888
115	7.8	50.1	52.2	54.4	56.6	58.7	c	21 54.40	305 36 10.0 9.1	V 41.040	7 21 31.52	15 27 51.13	15 1820
116	9.4	16.4	18.5	20.6	22.8	24.9	c	23 20.64	305 36 " "	III B 37.790	7 22 57.75	15 32 7.49	15 1833
117	9.2	10.4	12.7	14.8	16.6	18.4	e	23 44.94	305 52 10.0 8.1	VII 43.920	7 23 22.09	15 10 56.50	15 1839
118	8.0	22.3	24.4	26.5	28.7	30.9	c	25 26.56	304 58 10.0 8.7	III 46.525	7 25 3.61	16 4 8.93	15 1856
119	9.3	34.3	36.4	38.6	40.8	42.8	c	26 38.58	305 50 10.0 8.6	III 43.640	7 26 15.72	15 13 2.29	15 1869
120	9.3	27.4	29.5	31.2	33.0	35.4	a	28 1.11	305 20 10.0 8.2	I 41.400	7 27 38.21	−15 43 46.92	−15 1885
121	9.0	16.3	18.5	20.5	22.8	25.0	c	28 20.62	305 48 10.0 8.0	III 43.925	7 27 57.77	−15 14 57.89	−15 1888
122	8.3	58.0	0.2	2.3	4.4	6.6	c	29 2.30	305 48 " "	V 46.015	7 28 39.45	15 14 18.40	15 1892
123	9.3	28.4	30.6	32.7	34.5	36.4	e	29 2.87	305 48 " "	VII B 44.815	7 28 40.01	15 17 55.20	15 1893
124	9.2	50.2	52.0	54.0	55.8	57.9	a	31 23.61	306 34 10.0 9.0	I A 39.805	7 31 0.84	14 27 0.48	14 1987
125	8.2	10.9	12.9	14.7	16.7	18.8	a	31 44.44	306 34 " "	I 42.550	7 31 21.67	14 29 22.40	14 1994
126	8.6	45.7	47.3	51.3	53.6	55.7	b_2 c_3	31 55.72	306 34 " "	III 45.090	7 31 32.95	14 28 34.26	14 2001
127	9.2	4.7	6.9	9.0	11.3	13.5	c	32 9.08	306 34 " "	V B 47.220	7 31 46.31	14 31 7.50	14 2013
128	9.1	43.6	45.8	47.7	49.7	51.6	e	32 18.14	306 34 " "	VII A 41.190	7 31 55.38	14 26 34.66	14 2018
129	9.4	18.7	20.9	23.0	25.2	27.3	c	34 23.02	306 14 10.0 8.6	III A 44.450	7 34 0.22	14 45 33.93	14 2061
130	8.7	37.5	39.8	41.9	46.1	47.7	c_3 d_2	34 37.59	306 14 " "	VI B 46.725	7 34 14.78	−14 51 19.13	−14 2065
131	9.3	47.5	49.6	51.7	53.8	56.0	c	36 51.72	306 14 " "	III 43.610	7 36 28.91	−14 49 5.68	−14 2099
132	9.3	35.0	37.2	39.3	41.5	43.7	c	37 39.34	306 14 " "	III A 44.940	7 37 16.54	14 45 25.76	14 2134
133	9.2	39.7	41.8	43.9	46.2	48.3	c	38 43.98	306 14 " "	III A 43.710	7 38 21.18	14 45 49.77	14 2171
134	9.0	20.9	23.0	25.2	27.4	29.5	c	40 25.20	305 22 10.0 6.1	III B 44.865	7 40 2.32	15 44 0.47	15 2010
135	9.4	9.0	11.2	13.3	15.4	17.6	c	41 13.30	305 22 " "	III B 44.000	7 40 50.39	15 44 17.38	15 2020
136	9.4	5.2	7.3	9.4	11.6	13.8	c	42 9.46	305 22 " "	V C 48.340	7 41 46.55	15 46 7.25	15 2034
137	7.6	18.0	19.6	23.8	25.9	28.1	b_2 c_3	43 28.11	305 22 " "	III B 42.990	7 43 5.20	15 44 37.60	15 2049
138	7.6	30.6	32.8	34.9	37.0	39.1	c	43 34.88	305 22 " "	V B 38.610	7 43 11.97	15 46 1.94	15 2052
139	9.0	4.1	6.4	8.5	10.7	12.9	c	44 8.52	305 22 " "	VI A 46.740	7 43 45.62	15 36 57.51	15 2056
140	9.0	2.0	4.2	6.3	8.6	10.6	c	46 6.34	305 32 10.0 6.5	III A 41.560	7 45 43.46	−15 28 36.85	−15 2079

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
141	8.9	9.7	11.8	14.1	16.2	18.4	c	47 14.04	305 32	10.0	6.5	III C	45.050	7 46 51.15	−15 37 11.73	−15 2090
142	9.1	3.8	5.9	8.0	10.2	12.4	c	49 8.06	305 28	10.0	7.2	III B	50.630	7 48 45.17	15 36 12.25	15 2110
143	9.1	59.6	1.8	4.1	6.3	8.3	c	50 4.02	305 28	“	“	III	51.845	7 49 41.14	15 32 35.49	15 2120
144	9.2	4.2	5.8	10.0	12.2	......	b_2 c_2	51 14.33	305 28	“	“	III C	49.340	7 50 51.44	15 39 50.74	15 2128
145	9.2	43.9	45.9	48.1	50.0	51.8	e	51 18.24	305 28	“	“	VII	44.450	7 50 55.36	15 34 58.41	15 2130
146	8.5	18.9	21.0	22.9	24.9	26.8	e	51 53.20	305 28	“	“	V B	46.560	7 51 30.31	15 37 31.64	15 2137
147	9.0	19.1	21.3	23.5	25.7	27.7	c	53 23.46	307 0	10.0	7.0	III	43.920	7 53 0.74	14 3 4.58	13 2319
148	9.1	8.2	10.4	12.5	14.7	16.9	c	54 12.54	305 38	10.0	7.9	V B	42.110	7 53 49.67	15 28 57.06	15 2157
149	8.2	56.6	58.9	0.9	2.9	4.7	e	54 31.13	305 38	“	“	V A	40.290	7 54 8.27	15 23 3.49	15 2161
150	8.0	7.7	9.8	11.8	13.7	15.5	e	56 42.02	305 40	10.0	8.1	VII B	(39).690	7 56 19.15	−15 27 44.28	−15 2190
151	8.8	7.2	9.1	11.3	13.2	15.0	e	57 41.50	305 40	“	“	V A	46.310	7 57 18.65	−15 19 8.92	−15 2201
152	8.9	34.0	36.2	38.3	40.5	42.6	c	59 38.32	305 26	10.0	7.6	III A	38.970	7 59 15 44	15 35 31.29	15 2230
153	9.1	16.9	19.1	21.3	23.4	25.6	c	0 21.26	305 26	“	“	V A	40.470	7 59 58.38	15 35 2.89	15 2238
154	9.0	54.4	56.6	58.7	0.7	2.4	e	0 28.85	305 26	“	“	VII B	41.960	8 0 5.96	15 41 3.01	15 2240
155	8.8	15.7	17.8	19.9	21.8	......	e	0 50.04	305 26	“	“	VII	(41).190	8 0 27.15	15 38 4.32	15 2241
156	9.1	26.7	28.9	31.0	33.2	35.3	c	2 31.02	305 30	10.0	7.8	III C	46.150	8 2 8.13	15 38 55.67	15 2258
157	8.6	8.0	10.4	12.3	14.3	16.1	e	2 42.53	305 30	“	“	V	49.880	8 2 19.66	15 31 17.77	15 2261
158	9.0	28.6	30.8	33.0	35.1	37.2	c	4 32.94	305 44	10.0	8.6	III C	49.050	8 4 10.08	15 23 59.59	15 2271
159	8.0	59.2	1.3	3.5	5.8	7.8	c	5 3.52	305 44	“	“	V	51.890	8 4 40.67	15 16 38.96	15 2278
160	9.0	45.9	......	50.4	52.6	54.7	c	5 50.36	305 44	“	“	V C	47.850	8 5 21.50	−15 24 22.97	−15 2288
161	9.4	16.6	18.9	20.7	22.7	24.6	e	5 51.02	305 44	“	“	VII C	43.030	8 5 28.16	−15 25 55.15	−15 2289
162	9.2	19.5	21.6	23.8	26.0	28.3	c	7 23.84	305 12	10.0	7.6	V A	39.580	8 7 0.95	15 49 23.17	15 2304
163	9.1	7.5	9.5	11.3	13.2	15.7	a	8 41.28	305 12	“	“	I B	42.470	8 8 18.38	15 54 56.08	15 2319
164	9.2	28.0	30.2	32.1	34.4	36.5	c	10 32.24	306 2	10.0	7.4	V	46.130	8 10 9.43	15 0 31.14	14 2440
165	8.1	25.0	27.0	28.9	30.7	33.0	a	11 58.68	305 40	10.0	7.8	I	45.420	8 11 35.84	15 22 45.25	15 2351
166	8.1	3.8	5.8	7.7	9.6	11.9	a	12 37.45	306 12	10.0	7.6	III	45.740	8 12 14.66	14 50 38.42	14 2456
167	9.1	28.8	31.0	33.0	35.3	37.5	c	13 33.12	305 32	10.0	7.1	III A	40.810	8 13 10.27	15 29 1.85	15 2365
168	9.0	20.6	22.7	24.6	26.6	28.5	e	13 54.90	305 32	“	“	V B	41.110	8 13 32.04	15 35 23.95	15 2368
169	9.3	30.1	32.3	34.4	36.7	38.9	c	15 34.48	305 4	10.0	6.5	III	46.770	8 15 11.59	15 58 23.53	15 2379
170	9.2	6.4	8.6	10.6	12.8	15.0	c	16 10.68	305 4	“	“	V	49.640	8 15 47.79	−15 57 29.02	15 2383
171	9.3	23.8	26.0	28.0	30.1	31.9	e	16 58.26	305 32	10.0	7.0	V C	47.260	8 16 35.40	−15 36 39.59	−15 2390
172	8.9	10.8	13.1	15.0	17.0	18.9	e	17 45.27	305 32	“	“	V B	49.610	8 17 22.42	15 32 42.18	15 2397
173	8.9	56.3	58.4	0.4	2.4	4.2	e	18 30.64	305 32	“	“	V C	50.035	8 18 7.79	15 35 46.82	15 2405
174	8.8	36.8	38.3	42.6	44.7	46.8	b_2 c_3	19 46.86	305 32	“	“	III A	42.720	8 19 24.02	15 28 26.42	15 2417
175	7.9	9.0	11.2	13.1	15.0	16.9	e	20 43.43	306 10	10.0	7.2	VII B	38.585	8 20 20.64	14 58 12.91	14 2510
176	9.0	15.1	17.2	19.0	20.8	23.1	a	20 48.73	306 10	“	“	III A	41.440	8 20 25.95	14 50 49.35	14 2511
177	9.1	22.4	24.5	26.7	29.0	31.1	c	22 26.74	305 28	10.0	7.6	III A	37.650	8 22 3.89	15 34 4.47	15 2436
178	9.0	17.8	19.9	22.0	24.2	26.4	c	23 22.06	305 28	“	“	III B	46.810	8 22 59.21	15 37 37.47	15 2445
179	9.0	7.4	9.5	11.2	13.0	15.4	a	24 41.08	305 28	“	“	I A	44.070	8 24 18.24	15 32 1.71	15 2454
180	9.1	17.8	20.2	22.3	24.4	26.5	c	25 22.24	305 28	“	“	III B	39.150	8 24 59.39	−15 40 5.16	−15 2458
181	9.3	24.3	26.5	28.6	30.8	33.0	c	26 28.64	305 28	“	“	III B	43.680	8 26 5.81	−15 38 38.58	−15 2470
182	8.8	46.5	48.6	50.7	52.8	55.1	c	26 50.74	305 28	“	“	V C	49.350	8 26 27.90	15 40 2.67	15 2475
183	8.8	......	19.6	21.5	23.5	25.4	e	26 51.79	305 28	“	“	VII	52.640	8 26 28.97	15 32 33.50	15 2476
184	8.0	50.0	52.2	54.4	56.5	58.7	c	28 54.36	305 38	10.0	7.4	III	43.610	8 28 31.55	15 25 26.53	15 2487
185	9.4	53.7	55.9	58.0	0.2	2.3	c	29 58.02	305 50	10.0	7.0	III	46.200	8 29 35.23	15 12 37.80	15 2502
186	9.1	51.5	53.6	55.4	57.3	59.6	a	31 25.28	305 30	10.0	7.7	III C	47.000	8 31 2.45	15 38 49.31	15 2510
187	9.3	47.8	49.9	51.9	56.3	58.0	c_3 d_2	31 47.75	305 30	“	“	VI A	41.420	8 31 24.94	15 30 55.19	15 2512
188	8.3	50.5	52.6	54.7	56.9	59.0	c	32 54.74	305 30	“	“	V C	42.420	8 32 31.91	15 40 17.52	15 2520
189	9.1	32.3	34.6	36.7	39.0	41.0	c	33 36.72	305 30	“	“	V B	41.330	8 33 13.90	15 37 26.12	15 2525
190	8.2	30.0	32.3	34.2	36.1	38.0	e	34 4.52	306 8	10.0	8.4	V	43.410	8 33 41.76	−14 55 30.48	−14 2594
191	9.6	56.2	58.2	0.0	1.9	4.1	a	38 29.84	305 46	10.0	6.5	I C	47.640	8 38 7.05	−15 22 39.11	−15 2559
192	9.2	37.0	38.9	40.7	42.7	45.0	a	39 10.60	305 46	“	“	III A	41.040	8 38 47.82	15 15 4.54	15 2565
193	9.3	24.7	27.0	29.2	31.2	33.4	c	39 29.10	305 10	10.0	6.6	V	42.185	8 39 6.27	15 53 59.47	15 2568
194	8.6	38.2	39.6	43.8	46.0	48.2	b_2 c_3	40 48.17	306 0	10.0	7.6	III	43.180	8 40 25.42	15 3 37.44	14 2637
195	9.3	5.8	8.0	10.1	14.4	16.0	c_3 d_2	45 5.83	305 38	10.0	7.0	III	47.520	8 44 43.06	15 24 16.87	15 2599
196	9.4	12.8	15.0	17.0	21.2	22.9	c_3 d_2	46 12.75	305 38	“	“	V	43.975	8 45 49.99	15 25 25.59	15 2605
197	8.9	43.6	45.6	47.4	49.2	51.4	a	46 17.21	305 38	“	“	III	43.240	8 45 54.45	15 25 39.37	15 2606
198	9.0	20.3	22.5	24.5	26.7	29.0	c	47 24.60	305 38	“	“	V C	42.390	8 47 1.83	15 32 22.65	15 2609
199	8.6	14.2	16.3	18.5	20.6	22.7	c	48 18.46	305 38	“	“	III A	42.990	8 47 55.71	15 22 30.09	15 2616
200	9.3	42.6	44.6	46.4	48.3	50.6	a	53 16.24	305 50	10.0	7.0	I	45.420	8 52 53.51	−15 12 58.51	−15 2649

Reduction Elements. Zone 97.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 5.2....	−0.022	+0.188	+0.233	−0.048	+0.178	+0.066
5.4....	−0.073	+0.168	−0.102			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

CIRCLE READING.	64 Eridani		ε Leporis		β Orionis		α Leporis		20 Navis		6 Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	308 20 9.10		298 32 9.45		312 42 8.80		303 8 8.75		305 34 8.70		308 56 8.40	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	46.150	5 58.54		5 18.42	46.165	5 57.92		5 55.06		5 15.79		5 11.48
II Red to Mer.	.150	0.13	44.045	0.20	.110	0.08		0.18		0.15	43.710	0.10
VI Inclination	.225		.130	−0.18	.135		46.010	−0.45	43.955	−0.45	.740	−0.18
VII Refraction	.205	1 16.3	.095	1 50.7	.185	1 5.4	45.990	1 32.4	.950	1 25.0	.730	1 15.4

CIRCLE READING.	Lalande 17333		Piazzi VIII. 227	
	° ′ ″		° ′ ″	
	302 40 8.60		305 18 7.90	
	r	′ ″	r	′ ″
I Microm. Eq.	44.220	5 21.52	45.150	5 39.36
II Red. to Mer.	.210	0.18	.165	0.16
VI Inclination	.275		.210	
VII Refraction	.300	1 34.9	.205	1 26.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
64 Eridani	4 55 38.88	11	+0.12	−35.33	308 24 51.5	25.7
ε Ursae Minoris s. p.	4 57 17.85	6	+0.09	[−34.42]	58 50	....
ε Leporis	5 1 36.86	11	+0.10	−35.31	298 35 37.2	25.8
β Orionis	5 10 5.52	11	+0.12	−35.40	312 47 1.4	24.9
α Leporis	5 28 41.91	11	+0.11	−35.26	303 12 31.1	25.9
20 Navis	8 9 7.05	11	+0.11	−35.24	305 37 59.2	23.8
6 Hydrae	8 35 39.71	11	+0.12	−35.23	309 0 4.4	25.4
Lalande 17333	8 42 35.05	11	+0.11	−35.18	302 43 55.4	26.1
76 Draconis s. p.	8 50 34.93	9	+0.09	[−36.10]	58 54	....
Piazzi VIII. 227	8 54 25.07	11	+0.11	−35.23	305 22 21.4	24.2

h 5.152 .... *dt* .... s −35.325

Hourly rate .... + 0.0305

Adopted Equator Point .... 321° 6′ 25.22″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 10	30.070	34.0	32.4
6 0	30.073	32.5	31.5
6 50	30.088	31.9	30.9
7 55	30.100	30.8	29.6
8 55	30.107	29.5	28.5

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					$D =$ Z. D. N. to 1895.0				
			304°	305°	306°	307°	308°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	″	″	″	″	″
304	+0.111	5 0	+12.673	+12.794	+12.913	+13.030	+13.146	+2.71	+2.44	+2.15	+1.87	+1.59
305	0.112	5 30	12.477	12.599	12.721	12.841	12.960	3.01	2.74	2.46	2.19	1.89
306	0.113	6 0	12.318	12.441	12.562	12.682	......	3.40	3.13	2.86	2.59	....
307	0.115	6 30	12.198	12.320	12.439	12.557	......	3.85	3.60	3.34	3.09	....
308	+0.116	7 0	+12.119	12.236	12.353	12.467	......	+4.37	4.14	3.91	3.67	....
		7 30	......	12.196	12.306	12.414	12.522	....	4.73	4.52	4.31	4.09
		8 0	......	12.197	12.300	12.400	+12.500	....	5.38	5.19	5.01	+4.81
		8 30	......	12.241	12.331	12.424	......	....	6.07	5.91	5.76	....
		9 0	......	+12.323	+12.405	+12.486	......	....	+6.77	+6.65	+6.52	....

APPARENT RIGHT ASCENSION.	R			
	304° 30′	305° 30′	306° 30′	307° 30′
h m	″	″	″	″
5 0	88.04	84.84	81.81	78.90
5 30	88.13	84.92	81.88	78.98
6 0	88.21	85.00	81.96	79.05
6 30	88.31	85.09	82.05	79.14
7 0	88.43	85.21	82.17	79.25
7 30	88.57	85.35	82.30	79.38
8 0	88.70	85.47	82.41	79.49
8 30	88.80	85.57	82.51	79.58
9 0	88.92	85.68	82.62	79.69

1895 MARCH 9. ZONE 98. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	8.8	17.3	19.5	21.6	23.8	26.0	c	45 21.64	303 26	10.0	8.5	III	42.520	5 44 57.75	−17 36 46.11	−17 1253
2	8.8	19.2	21.3	23.6	25.8	28.0	c	49 23.58	303 44	10.0	7.5	III	47.500	5 48 59.70	17 17 11.83	17 1278
3	9.0	3.1	5.2	7.4	9.7	11.8	c	50 7.44	304 0	10.0	7.5	III C	47.750	5 49 43.57	17 7 33.34	17 1281
4	8.6	57.2	59.3	1.4	3.6	5.8	c	51 1.46	304 0	"	"	V A	43.075	5 50 37.61	16 59 22.09	17 1288
5	9.2	58.1	0.3	2.3	4.4	6.0	e	53 32.28	303 54	10.0	8.1	VII	45.980	5 53 8.40	17 7 42.49	17 1309
6	9.3	13.0	14.5	18.7	20.9	23.2	$b_2 c_3$	55 23.13	303 54	"	"	III A	43.830	5 54 59.25	17 5 9.31	17 1320
7	8.7	40.9	43.0	45.2	47.4	49.5	c	55 45.20	303 54	"	"	V A	43.650	5 55 21.32	17 5 13.04	17 1321
8	8.6	36.9	38.9	40.7	42.7	45.0	a	57 10.93	303 32	10.0	8.0	I	43.690	5 56 46.99	17 30 28.03	17 1327
9	9.4	32.9	35.1	37.2	39.5	41.6	c	57 37.26	303 44	10.0	7.6	V	44.640	5 57 13.34	17 18 10.51	17 1329
10	8.6	24.0	26.2	28.4	30.4	32.7	c	58 28.34	303 12	10.0	8.1	V	42.210	5 58 4.35	−17 50 58.88	−17 1334
11	8.7	59.3	1.6	3.8	5.9	8.2	c	59 3.76	303 12	"	"	V A	41.490	5 58 39.78	−17 47 57.99	−17 1339
12	9.1	5.2	7.4	9.3	11.0	13.5	a	1 39.32	303 50	10.0	7.9	I	42.620	6 1 15.39	17 12 49.59	17 1349
13	9.0	6.6	8.7	10.8	13.0	15.0	c	2 10.82	303 26	10.0	8.5	III A	40.960	6 1 46.85	17 34 8.45	17 1352
14	8.8	34.7	36.8	38.9	41.2	43.5	c	3 39.02	303 26	"	"	III	46.380	6 3 15.03	17 35 39.74	17 1362
15	7.5	46.3	48.3	50.2	52.2	54.5	a	5 20.49	302 56	10.0	8.0	I	43.840	6 4 56.43	18 6 30.71	18 1316
16	8.8	41.9	44.0	45.9	47.8	50.2	a	10 16.04	303 34	10.0	7.5	I A	38.610	6 9 52.04	17 26 56.70	17 1407
17	9.1	12.3	14.0	18.1	20.4	22.5	$b_2 c_3$	10 22.54	303 34	"	"	III A	42.355	6 9 58.55	17 25 45.22	17 1408
18	9.2	48.8	51.0	53.0	55.0	56.9	e	10 22.95	303 34	"	"	V A	38.090	6 9 58.95	17 27 7.20	17 1410
19	9.2	2.2	4.3	6.5	8.6	10.8	c	12 6.48	303 34	"	"	V B	42.045	6 11 42.47	17 32 20.64	17 1420
20	8.2	25.9	28.0	30.2	32.5	34.5	c	12 30.22	303 34	"	"	V	44.585	6 12 6.21	−17 28 18.38	−17 1423
21	8.7	56.7	58.8	0.9	3.2	5.4	c	14 1.00	303 48	10.0	9.1	III	44.080	6 13 37.01	−17 14 26.85	−17 1434
22	8.0	5.8	7.9	9.7	11.7	14.0	a	15 39.91	303 30	10.0	7.6	I (A)	44.680	6 15 15.89	17 29 2.64	17 1446
23	9.0	40.8	43.1	45.2	47.5	49.7	c	15 45.26	303 30	"	"	III	45.665	6 15 21.23	17 31 58.79	17 1447
24	......	24.4	26.5	28.5	30.5	32.3	e	15 58.42	303 30	"	"	V C	45.580	6 15 34.38	17 38 27.11	17 1449
25	9.1	14.7	16.8	18.9	21.2	23.3	c	17 18.98	303 30	"	"	III A	46.450	6 16 54.95	17 28 29.69	17 1461
26	9.3	59.9	2.0	4.2	6.3	8.6	c	19 4.20	303 54	10.0	8.3	III	43.795	6 18 40.21	17 8 34.52	17 1468
27	8.6	52.8	54.7	57.0	59.2	1.5	c	19 57.04	303 40	10.0	8.0	V	41.540	6 19 33.01	17 23 19.36	17 1473
28	8.6	48.2	50.6	52.5	54.6	56.2	e	20 22.55	304 18	10.5	9.3	VII	45.830	6 19 58.60	16 43 54.60	16 1469
29	8.6	30.0	32.1	34.3	36.6	38.6	c	22 34.32	302 52	10.0	8.5	III	44.490	6 22 10.18	18 10 25.72	18 1424
30	8.1	5.7	7.8	10.0	12.3	14.4	c	23 10.04	303 26	10.0	8.6	V	44.985	6 22 45.97	−17 36 14.98	−17 1498
31	9.2	47.1	49.5	51.6	53.8	55.9	c	23 51.58	303 26	"	"	III A	41.790	6 23 27.52	−17 34 1.53	−17 1502
32	8.3	16.4	18.5	20.6	22.7	25.0	c	25 20.64	303 16	10.0	7.7	III A	39.300	6 24 56.55	17 44 50.91	17 1512
33	8.2	35.9	38.2	40.4	42.5	44.5	c	26 40.30	303 16	"	"	III B	40.880	6 26 16.20	17 50 49.67	17 1515
34	8.9	45.2	47.4	49.2	51.1	53.5	a	28 19.38	303 28	10.0	7.9	I A	37.530	6 27 55.30	17 33 25.09	17 1524
35	8.2	12.5	14.5	16.5	18.3	20.6	a	28 46.59	303 28	"	"	III B	43.030	6 28 22.50	17 38 8.56	17 1528
36	8.9	12.8	14.7	19.0	20.8	23.5	$c_4 d_3$	29 10.49	303 42	10.0	8.0	VI B	40.980	6 28 46.42	17 24 47.61	17 1532
37	9.0	22.0	23.6	27.8	30.0	32.3	$b_2 c_3$	30 32.21	303 42	"	"	III A	44.530	6 30 8.16	17 17 11.25	17 1540
38	9.2	10.2	12.3	14.6	16.7	18.9	c	31 14.54	304 6	10.0	8.1	V	44.120	6 30 50.53	16 56 33.22	16 1536
39	8.8	13.3	15.5	17.7	20.0	22.2	c	33 17.74	303 10	9.8	7.2	V	47.015	6 32 53.61	17 51 41.89	17 1560
40	9.3	34.1	36.3	38.5	40.7	42.8	c	34 38.48	303 10	"	"	III	43.300	6 34 14.34	−17 52 53.36	−17 1567
41	9.2	6.0	8.2	10.3	12.1	14.0	e	34 40.07	303 10	"	"	VII A	40.245	6 34 15.94	−17 50 37.39	−17 1568
42	8.9	36.6	38.7	40.6	42.5	44.8	a	37 10.79	303 10	"	"	I	44.400	6 36 46.64	17 52 32.74	17 1583
43	9.3	12.5	14.7	16.6	18.6	20.8	a	37 46.79	303 10	"	"	I	46.750	6 37 22.62	17 51 47.89	17 1587
44	9.2	10.8	13.1	15.2	17.4	19.6	c	38 15.22	303 46	10.0	8.4	III	44.880	6 37 51.14	17 16 22.03	17 1591
45	9.0	15.0	17.3	19.2	21.4	23.6	c	40 19.30	303 24	10.0	7.9	III C	46.050	6 39 55.16	17 44 28.56	17 1603
46	9.4	46.3	48.5	50.6	52.9	55.0	c	40 50.66	303 24	"	"	III	42.900	6 40 26.53	17 39 2.43	17 1607
47	9.3	21.6	23.7	25.9	28.1	30.3	c	41 25.92	303 24	"	"	III C	46.790	6 41 1.78	17 44 14.80	17 1610
48	8.8	37.4	39.7	41.8	44.1	46.3	c	42 41.86	303 24	"	"	III A	47.335	6 42 17.73	17 34 23.39	17 1619
49	8.9	7.7	10.0	12.0	14.0	15.8	e	42 41.88	303 24	"	"	VII	43.740	6 42 17.74	17 38 47.60	17 1620
50	8.8	11.6	13.7	15.8	18.1	20.4	c	45 15.92	302 50	10.0	7.8	III	45.175	6 44 51.71	−18 12 22.43	−18 1562
51	9.0	11.1	13.4	15.3	17.4	19.1	e	45 45.28	303 36	10.0	8.5	V	42.460	6 45 21.16	−17 27 12.36	−17 1641
52	8.7	53.4	55.6	57.8	0.0	2.0	c	48 57.76	303 32	10.0	7.9	III	46.470	6 48 33.62	17 29 56.84	17 1663
53	8.5	0.2	2.3	4.4	6.7	8.9	c	50 4.50	303 16	10.0	8.0	III	44.045	6 49 40.33	17 46 44.62	17 1668
54	8.3	30.4	32.6	34.7	37.0	39.1	c	50 34.76	303 16	"	"	III	41.760	6 50 10.59	17 47 28.67	17 1673
55	9.2	20.7	22.9	25.1	27.3	29.4	c	52 25.08	303 36	10.0	8.5	III	46.240	6 52 0.94	17 26 2.17	17 1693
56	8.0	7.6	9.7	11.9	14.2	16.3	c	54 11.94	303 28	10.0	7.8	III B	41.960	6 53 47.77	17 38 39.62	17 1705
57	9.0	7.6	9.9	12.0	14.3	16.4	c	55 12.04	303 28	"	"	III A	42.440	6 54 47.89	17 32 2.28	17 1714
58	8.5	4.8	7.0	9.2	11.4	13.6	c	57 9.20	303 48	10.0	8.1	III	43.010	6 56 45.07	17 15 5.69	17 1729
59	8.9	53.0	55.3	57.5	59.7	1.8	c	57 57.46	303 48	"	"	III A	40.550	6 57 33.34	17 12 38.53	17 1735
60	9.2	2.7	4.9	6.9	8.8	10.7	e	58 36.79	303 24	10.0	8.3	VII	46.230	6 58 12.62	−17 38 6.10	−17 1742[2]
61	9.5	28.7	30.7	33.2	35.2	37.5	c	0 33.06	304 6	10.0	7.6	III	49.390	7 0 8.97	−16 55 3.96	−16 1740
62	9.1	49.0	51.2	53.3	57.5	59.3	$c_3 d_2$	0 48.99	304 6	"	"	VI	52.970	7 0 24.90	16 53 55.83	16 1744
63	9.3	28.9	31.2	33.3	35.4	37.8	c	1 33.32	304 6	"	"	V	45.040	7 1 9.22	16 56 28.20	16 1754
64	......	6.2	8.4	10.6	12.9	14.9	c	2 10.60	304 6	"	"	V C	42.740	7 1 46.49	17 3 38.83	16 1763
65	9.5	25.9	28.1	30.3	32.5	34.7	c	3 30.30	304 6	"	"	III B	47.460	7 3 6.19	16 58 55.97	16 1781
66	8.8	28.6	30.8	32.9	35.1	37.2	c	4 32.92	303 12	10.0	8.1	III	44.260	7 4 8.71	17 50 46.50	17 1796
67	9.1	1.3	3.4	5.2	7.0	9.4	a	5 35.36	303 24	10.0	8.0	III (A)	42.815	7 5 11.18	−17 35 59.38	−17 1808

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
68	9.3	52.0	54.1	56.4	58.5	0.6	c	5 56.32	303 24 10.0	8.0	V B	40.475	7 5 32.12	−17 43 13.17	−17 1811
69	9.1	10.8	13.0	15.0	17.3	19.6	c	7 15.14	303 52 10.0	7.5	V A	40.900	7 6 51.01	17 8 35.76	17 1827
70	9.0	23.1	25.3	27.3	29.2	31.0	e	7 57.19	303 32 9.5	7.0	VII	44.710	7 7 33.01	−17 30 39.51	−17 1839
71	8.8	24.5	26.7	28.8	31.0	33.0	c	9 28.80	303 32 "	"	V B	39.055	7 9 4.61	−17 35 42.18	−17 1855
72	9.2	44.2	46.4	48.7	50.9	53.0	c	10 48.64	304 6 10.0	7.4	III	45.230	7 10 24.53	16 56 28.00	16 1845
73	9.0	52.1	54.2	56.3	58.7	0.7	c	11 56.40	303 24 10.0	7.6	III B	39.650	7 11 32.19	17 43 31.37	17 1878
74	8.2	14.3	16.5	18.7	20.8	23.0	c	13 18.66	303 24 "	"	III A	43.610	7 12 54.47	17 35 47.38	17 1895
75	9.2	19.5	21.8	23.8	26.1	28.3	c	14 23.90	304 2 10.0	8.0	III	45.240	7 13 59.77	17 0 29.14	16 1885
76	7.5	55.0	57.2	59.3	1.5	3.7	c	14 59.34	304 2 "	"	III	41.370	7 14 35.21	17 1 43.63	16 1892
77	7.8	40.7	43.0	45.0	47.0	48.8	e	15 14.93	303 44 10.0	8.1	VII	39.090	7 14 50.76	17 20 28.86	17 1917
78	9.3	36.0	38.1	40.2	42.0	43.9	e	16 10.15	304 12 10.0	8.5	VII	43.930	7 15 46.04	16 50 54.74	16 1905
79	8.8	28.9	31.0	33.0	34.7	37.0	a	18 3.03	303 30 10.0	8.0	III B	37.625	7 17 38.82	17 38 12.12	17 1935
80	8.0	13.4	15.5	17.7	19.8	22.1	c	18 17.70	303 30 "	"	V B	40.630	7 17 53.50	−17 37 14.81	−17 1937
81	8.9	46.1	48.4	50.4	52.8	54.8	c	18 50.50	303 30 "	"	V B	38.090	7 18 26.29	−17 38 3.77	−17 1942
82	8.0	11.6	13.8	18.1	19.7	22.5	c_4 d_3	19 9.47	303 30 "	"	VI	38.695	7 18 45.27	17 34 38.69	17 1947
83	8.9	26.9	28.9	31.3	33.5	35.6	c	21 31.24	303 30 "	"	III A	38.875	7 21 7.04	17 31 21.00	17 1967
84	8.8	15.5	17.7	19.8	22.0	23.9	c	22 19.78	303 30 "	"	III B	38.100	7 21 55.57	17 38 4.68	17 1973
85	6	0.5	2.9	4.9	7.0	9.0	c	23 4.86	303 30 "	"	III C	42.800	7 22 40.65	17 39 47.77	17 1980
86	9.1	45.0	47.4	49.4	51.4	53.2	e	23 19.31	303 44 10.0	8.4	VII	39.320	7 22 55.13	17 20 27.46	17 1981
87	9.2	51.9	54.7	56.2	0.5	2.7	b_1 c_2	25 4.86	303 44 "	"	II	45.270	7 24 40.69	17 18 33.17	17 1993
88	8.5	26.6	28.9	31.0	33.2	35.3	c	25 31.00	303 44 "	"	III B	44.450	7 25 6.82	17 22 3.14	17 1998
89	8.8	3.6	6.2	8.0	9.9	11.8	e	25 37.94	303 44 "	"	VII	48.780	7 25 13.77	17 17 26.80	17 1999
90	8.6	46.5	48.8	50.7	52.5	54.8	a	28 20.71	303 44 "	"	I	48.170	7 27 56.53	−17 17 38.46	−17 2021
91	9.0	2.6	4.8	7.0	9.2	11.2	c	29 6.96	303 26 10.0	7.4	III	45.620	7 28 42.75	−17 36 29.68	−17 2029
92	9.1	53.8	55.9	58.0	0.2	2.4	c	29 58.06	303 26 "	"	III	47.970	7 29 33.86	17 35 44.91	17 2037
93	8.7	43.8	46.1	47.8	49.7	52.0	a	31 18.00	303 26 "	"	I (C)	47.250	7 30 53.78	17 42 25.98	17 2053
94	8.8	27.9	29.9	31.9	33.8	36.1	a	32 2.04	303 26 "	"	I C	48.080	7 31 37.82	17 42 10.32	17 2057
95	8.5	5.6	7.9	9.9	12.2	14.5	c	32 10.02	303 26 "	"	V	49.540	7 31 45.81	17 35 15.98	17 2058
96	9.1	31.0	33.3	35.4	37.5	39.7	c	43 35.38	303 16 10.0	8.4	III A	40.210	7 43 11.15	17 45 4.28	17 2160
97	9.1	37.9	40.0	42.2	44.4	46.6	c	44 42.22	303 16 "	"	III	45.315	7 44 17.99	17 46 41.44	17 2172
98	8.9	16.1	18.3	20.3	22.3	24.1	e	44 50.17	303 16 "	"	VII B	42.910	7 44 25.93	17 50 41.71	17 2173
99	8.6	58.9	1.3	3.5	7.6	9.4	c_3 d_2	45 59.05	303 16 "	"	V	41.270	7 45 34.82	17 47 59.90	17 2179
100	8.3	16.9	19.2	21.2	23.5	25.6	c	47 21.28	304 16 10.0	8.5	III	46.840	7 46 57.16	−16 46 10.01	−16 2163
101	8.0	0.9	3.3	5.4	7.6	9.8	c	48 5.40	303 30 10.0	7.6	V A	38.940	7 47 41.19	−17 31 30.12	−17 2196
102	8.9	42.9	45.0	46.9	48.9	51.0	a	50 17.03	303 30 "	"	I	45.580	7 49 52.82	17 32 37.51	17 2221
103	8.8	13.6	15.8	18.0	20.2	22.3	c	50 17.98	303 30 "	"	III	46.370	7 49 53.77	17 32 22.90	17 2222
104	8.9	2.9	5.0	7.3	9.5	11.6	c	51 7.26	304 18 10.0	9.1	V B	43.180	7 50 43.13	16 48 35.29	16 2192
105	9.4	2.8	5.0	7.2	9.3	11.5	c	52 7.16	304 18 "	"	III A	39.370	7 51 43.04	16 43 20.02	16 2201
106	8.8	46.4	48.5	50.3	52.3	54.6	a	53 20.54	303 22 10.0	8.0	III	42.710	7 52 56.32	17 41 34.49	17 2247
107	9.1	32.4	34.7	36.9	39.0	41.2	c	53 36.84	303 22 "	"	III B	46.940	7 53 12.62	17 43 27.19	17 2249
108	8.7	28.2	30.4	32.4	34.3	36.2	e	54 2.31	303 34 10.0	8.9	V	44.500	7 53 38.11	17 28 59.66	17 2252
109	8.6	8.7	10.9	12.9	15.1	17.3	c	55 12.98	304 8 10.0	8.4	V	45.380	7 54 48.84	16 54 41.72	16 2229
110	9.3	41.5	43.6	45.7	48.0	50.0	c	55 45.76	304 8 "	"	V B	44.170	7 55 21.62	−16 58 18.82	−16 2233
111	9.1	58.4	0.6	2.7	4.9	7.0	c	57 2.72	304 8 "	"	III A	40.560	7 56 38.59	−16 52 59.82	−16 2247
112	8.9	47.3	49.5	51.8	53.9	56.0	c	57 51.70	302 48 10.0	8.0	V A	38.380	7 57 27.43	18 13 46.42	18 2134
113	8.1	9.8	12.0	14.2	16.4	18.7	c	59 14.22	302 48 "	"	III B	44.460	7 58 49.94	18 18 18.64	18 2147
114	8.9	48.9	51.1	53.3	55.5	57.6	c	0 53.28	303 34 10.0	8.7	III	40.865	8 0 29.08	17 30 11.62	17 2317
115	8.8	35.0	37.2	39.4	41.6	43.8	c	2 39.40	303 34 "	"	III B	41.780	8 2 15.20	17 33 8.49	17 2333
116	8.6	1.5	3.6	5.7	7.9	10.0	c	4 5.74	303 34 "	"	III	42.670	8 3 41.55	17 29 38.11	17 2349
117	9.0	31.4	33.7	35.8	38.0	40.2	c	5 35.82	303 44 10.0	8.5	III C	46.780	8 5 11.63	17 24 46.11	17 2363
118	9.0	16.5	18.7	20.8	23.0	25.0	c	6 20.80	303 44 "	"	III B	48.515	8 5 56.62	17 21 0.10	17 2373
119	8.9	40.4	42.5	44.6	46.6	48.8	c	7 44.58	303 44 "	"	III A	43.450	8 7 20.42	17 16 9.28	17 2385
120	9.2	57.2	59.4	1.3	3.0	5.4	a	9 31.32	303 40 10.0	8.1	I	47.820	8 9 7.14	−17 22 0.59	−17 2397
121	8.9	10.8	13.6	15.1	19.4	21.6	b_1 c_2	10 23.77	303 40 "	"	I B	44.070	8 9 59.58	−17 26 26.79	−17 2404
122	8.5	45.7	48.0	50.1	52.4	54.5	c	10 50.14	303 40 "	"	V	42.780	8 10 25.96	17 23 38.69	17 2407
123	9.1	2.9	5.2	7.3	9.5	11.7	c	12 7.32	303 40 "	"	III	45.400	8 11 43.14	17 22 48.48	17 2418
124	9.1	54.5	56.6	58.8	0.6	2.6	e	12 28.49	302 52 10.0	8.6	V C	48.320	8 12 4.22	18 16 21.48	18 2248
125	9.0	49.9	52.4	54.5	56.8	58.8	c	13 54.48	302 52 "	"	V A	43.800	8 13 30.23	18 8 7.50	17 2429
126	8.0	6.0	8.4	10.4	12.7	14.9	c	15 40.48	302 52 "	"	III A	40.330	8 14 46.23	18 9 14.41	18 2277
127	9.3	22.6	24.8	27.1	29.5	31.7	c	16 27.14	303 36 10.0	8.0	III B	40.540	8 16 2.95	17 31 37.31	17 2453
128	9.1	6.2	8.3	10.4	12.7	14.8	c	17 10.48	303 36 "	"	III A	40.120	8 16 46.30	17 25 17.08	17 2461
129	6	12.4	14.7	16.7	18.6	20.4	e	17 46.60	303 48 10.0	7.8	V	41.635	8 17 22.44	17 16 2.78	17 2464
130	9.5	15.4	17.7	19.7	21.5	23.7	a	19 49.81	302 46 10.0	7.8	I A	40.330	8 19 25.55	−18 15 16.38	−18 2317
131	9.4	46.5	48.6	50.7	53.0	55.0	c	19 50.76	302 46 "	"	V	45.975	8 19 26.50	−18 16 43.45	−18 2318
132	7.0	55.9	58.0	59.9	1.8	4.0	[illegible]	21 29.94	303 56 10.0	8.4	III	45.560	8 21 5.80	17 6 47.63	16 2442
133	9.2	56.3	58.3	0.6	2.7	4.9	c	22 0.56	303 16 10.0	8.1	V B	46.990	8 21 36.35	17 49 36.63	17 2491
134	8.0	35.6	37.6	39.7	41.7	43.6	e	22 9.61	303 16 "	"	VII A	42.320	8 21 45.41	17 44 37.58	17 2493
135	8.0	6.0	8.2	10.4	12.3	14.1	e	22 40.15	303 16 "	"	VII B	43.690	8 22 15.94	17 50 40.21	17 2497
136	9.1	.....	3.6	5.4	7.6	9.9	a	25 35.80	303 6 10.0	8.1	I	45.350	8 25 11.59	17 56 55.19	17 2520
137	8.0	25.1	27.3	29.2	31.0	33.5	a	25 59.39	303 6 "	"	III B	43.580	8 25 35.17	18 0 43.67	17 2522
138	8.9	33.3	35.4	37.3	39.2	41.5	a	27 7.53	302 56 10.0	7.8	I A	38.950	8 26 43.31	18 5 43.73	17 2530
139	9.0	3.8	5.6	7.8	10.0	12.2	c	27 7.88	302 56 "	"	III B	38.370	8 26 43.65	18 12 24.74	18 2377
140	8.8	35.7	37.9	40.0	41.9	43.7	e	27 9.73	302 56 "	"	VII	37.670	8 26 45.50	−18 9 24.87	−18 2378

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
141	9.0	31.5	33.6	35.7	38.0	42.1	$c_2 d_1$	28 33.58	302 56 10.0 7.8	VI C 43.445	8 28 9.35	−18 14 0.43	−18 2388
142	9.2	41.7	44.1	46.2	48.5	50.8	c	29 46.26	302 56 " "	III A 38.700	8 29 22.04	18 5 50.73	17 2553
143	8.4	18.6	20.9	23.0	25.3	27.4	c	32 23.04	303 24 10.0 8.6	V B 50.590	8 31 58.87	17 40 30.24	17 2576
144	8.5	37.0	39.3	41.4	43.7	45.8	c	33 41.44	303 24 " "	III B 40.620	8 33 17.27	17 43 41.77	17 2586
145	9.1	47.1	49.3	51.4	53.6	55.8	c	34 51.44	303 24 " "	III A 38.740	8 34 27.28	17 37 49.67	17 2595
146	8.0	50.4	52.5	54.7	57.0	59.0	c	37 54.72	304 0 10.0 8.2	V 40.870	8 37 30.62	17 4 23.17	16 2559
147	9.3	4.6	6.8	8.9	11.3	13.4	c	39 9.00	303 28 10.0 8.1	III A 40.025	8 38 44.86	17 33 26.41	17 2623
148	8.6	9.9	12.2	14.2	16.4	18.5	c	40 14.24	303 28 " "	III B 43.180	8 39 50.09	17 38 54.72	17 2632
149	9.0	12.8	15.0	17.2	19.4	21.5	c	41 17.18	302 54 10.0 9.0	III 43.290	8 40 52.99	18 9 40.49	18 2466
150	7.5	31.9	34.1	36.2	38.5	40.6	c	42 36.26	302 42 10.0 8.0	III B 47.770	8 42 12.05	−18 23 29.90	−18 2474
151	8.7	20.4	22.6	24.8	27.0	29.3	c	43 24.82	302 42 " "	III 46.790	8 43 0.62	−18 20 35.12	−18 2481
152	8.3	14.7	17.0	19.2	21.3	23.5	c	44 19.14	303 22 10.0 8.0	III 47.260	8 43 55.00	17 40 24.22	17 2655
153	8.8	55.9	58.2	0.3	2.5	4.7	c	45 0.32	303 22 " "	III A 46.830	8 44 36.19	17 37 17.94	17 2660
154	9.2	28.6	30.8	33.0	35.2	37.4	c	45 33.00	303 22 " "	V C 49.300	8 45 8.86	17 46 11.98	17 2663
155	9.1	2.0	4.1	6.2	10.5	12.3	$c_3 d_2$	46 1.93	303 22 " "	VI C 44.650	8 45 37.79	17 47 41.27	17 2664
156	9.4	33.5	35.7	37.9	40.0	42.3	c	47 37.88	303 50 10.0 8.0	V 42.080	8 47 13.79	17 14 3.53	17 2675
157	9.5	55.3	57.6	59.8	2.1	4.2	c	48 59.80	303 34 10.0 7.7	III 45.320	8 48 35.69	17 29 3.38	17 2681
158	9.3	6.1	8.3	10.3	12.6	14.6	c	50 10.38	303 44 10.0 7.6	III 47.870	8 49 46.29	17 18 13.31	17 2687
159	6.7	56.3	58.6	0.8	2.9	5.2	c	51 0.76	303 12 10.8 9.1	V 43.720	8 50 36.63	17 51 34.09	17 2691
160	8.0	29.4	31.7	33.5	35.5	37.3	e	51 3.43	303 12 " "	VII 40.755	8 50 39.29	−17 52 31.18	−17 2692
161	.....	28.2	29.7	33.9	36.2	38.3	$b_2 c_3$	52 38.34	303 24 10.8 9.9	III 45.525	8 52 14.23	−17 38 58.53	−17 2696
162	8.7	10.7	13.0	15.1	17.3	19.5	c	53 15.12	303 24 " "	III 43.840	8 52 51.01	17 39 31.04	17 2700
163	9.5	13.0	15.0	17.2	19.5	21.7	c	56 17.28	303 10 10.0 7.7	III A 43.750	8 55 53.17	17 50 21.23	17 2711
164	9.1	35.0	37.5	39.5	43.8	45.5	$c_3 d_2$	56 35.16	303 10 " "	V B 42.240	8 56 11.04	17 57 19.05	17 2712
165	9.4	30.0	32.5	34.7	37.0	39.2	c	57 34.68	303 0 10.0 7.7	V B 45.080	8 57 10.55	18 6 25.36	17 2717
166	9.1	19.9	22.2	24.2	26.1	27.9	e	57 53.97	303 0 " "	V 45.745	8 57 29.85	18 2 59.00	17 2720
167	8.5	55.1	57.5	59.7	3.9	5.5	$c_3 d_2$	58 55.27	303 48 10.0 8.5	V 44.120	8 58 31.21	17 15 27.53	17 2726
168	8.6	22.2	24.4	26.4	28.5	30.3	e	58 56.40	303 48 " "	VII 42.670	8 58 32.34	17 15 55.53	17 2727
169	8.9	59.0	1.2	3.3	7.6	9.3	$c_3 d_2$	59 59.00	303 48 " "	VI B 47.170	8 59 34.94	17 17 43.03	17 2732
170	8.8	26.2	28.5	30.6	32.9	34.9	c	1 30.62	303 40 10.0 8.1	III 43.650	9 1 6.56	−17 23 37.54	−17 2742
171	8.9	57.9	0.0	2.2	4.3	6.6	c	2 2.20	303 40 " "	III A 40.970	9 1 38.15	−17 21 14.42	−17 2745
172	9.3	43.3	45.6	47.8	50.0	52.0	c	2 47.74	303 40 " "	III B 41.745	9 2 23.68	17 27 27.51	17 2752
173	8.2	43.6	45.0	49.4	51.5	53.7	$b_2 c_3$	3 53.72	303 40 " "	III B 40.720	9 3 29.67	17 27 48.24	17 2757
174	9.4	7.9	10.3	12.3	16.6	18.4	$c_3 d_2$	4 8.02	303 40 " "	VI B 44.320	9 3 43.97	17 26 39.51	17 2759
175	8.8	16.6	18.9	21.0	22.9	24.7	e	4 50.86	303 46 10.0 8.9	VII 44.625	9 4 26.82	17 17 19.56	17 2764
176	8.2	59.8	1.9	3.7	5.7	8.0	a	6 33.89	303 36 10.0 8.5	III A 45.265	9 6 9.85	17 23 53.24	17 2772
177	9.1	54.3	56.4	58.7	0.7	2.9	c	6 58.60	303 36 " "	III C 48.540	9 6 34.55	17 32 31.94	17 2773
178	9.3	17.9	20.2	22.5	24.6	26.8	c	9 22.40	302 58 10.0 7.4	VI B 50.100	9 8 58.32	18 6 52.63	17 2792
179	9.4	37.2	38.8	43.2	45.1	47.4	$b_2 c_3$	10 47.42	303 28 10.0 8.6	III C 45.930	9 10 23.38	17 41 23.50	17 2796
180	8.5	58.0	0.1	2.1	6.5	8.3	$c_3 d_2$	10 57.92	303 28 " "	VI A 42.200	9 10 33.88	−17 32 53.77	−17 2799
181	9.3	0.5	2.7	5.0	7.1	9.2	c	12 4.90	303 12 10.0 8.5	V 41.580	9 11 40.85	−17 52 21.80	−17 2803
182	8.8	43.3	45.3	47.1	48.9	51.3	a	13 17.32	303 12 " "	I 44.325	9 12 53.27	17 51 28.51	17 2808
183	9.4	11.1	13.3	15.3	17.1	19.6	a	13 45.43	303 12 " "	I B 45.485	9 13 21.38	17 54 20.28	17 2813
184	7.9	51.2	53.6	55.7	57.8	59.9	c	13 55.64	303 12 " "	III 50.010	9 13 31.60	17 49 40.13	17 2814
185	9.1	4.5	7.3	8.8	13.0	15.2	$b_1 c_2$	15 17.41	304 4 10.0 8.5	II 54.830	9 14 53.44	16 56 4.99	16 2754
186	9.3	47.6	49.9	51.9	53.9	55.7	e	15 21.88	304 4 " "	V C 54.220	9 14 57.90	17 2 43.57	16 2755
187	8.6	11.0	13.3	15.4	19.7	21.3	$c_3 d_2$	16 11.07	304 4 " "	V B 52.650	9 15 47.10	17 0 1.37	16 2757
188	8.7	39.8	42.0	43.9	45.9	47.8	e	17 13.92	303 44 10.0 7.5	VII 45.290	9 16 49.93	17 19 10.92	17 2828
189	8.5	11.8	14.0	16.1	18.3	20.5	c	17 16.14	303 44 " "	V 43.430	9 16 52.15	17 19 46.47	17 2829
190	8.2	5.5	7.7	9.7	11.7	13.8	e	18 39.76	304 0 10.0 7.7	VII 42.230	9 18 15.80	−17 4 9.07	−16 2767
191	9.0	19.7	21.9	23.9	25.9	27.7	e	19 53.90	304 0 " "	V 44.115	9 19 29.94	−17 3 33.07	−16 2775
192	8.9	56.2	58.3	0.1	2.1	4.4	a	24 30.38	303 8 10.0 8.2	III B 50.475	9 24 6.38	17 56 48.13	17 2868
193	8.0	5.9	8.1	10.2	12.5	14.6	c	27 10.26	303 8 " "	III B 44.750	9 26 46.27	17 58 38.65	17 2885
194	8.6	51.3	53.4	55.3	57.2	59.5	a	28 25.39	303 46 10.0 8.8	I 44.335	9 28 1.45	17 17 30.21	17 2893
195	8.5	55.3	57.5	59.5	1.9	4.0	c	31 59.64	302 52 10.0 8.1	III 44.800	9 31 35.66	18 11 26.00	17 2904
196	8.6	1.6	3.7	5.9	8.1	10.4	c	33 5.94	303 4 10.0 8.0	III 45.090	9 32 41.98	17 59 20.06	17 2910
197	9.0	43.0	44.9	47.3	49.5	51.5	c	33 47.24	302 54 10.0 8.5	V 41.010	9 33 23.27	18 10 39.22	17 2916
198	.....	28.5	30.8	32.7	34.5	36.6	(e)	34 2.50	302 54 " "	VII B 43.845	9 33 38.53	−18 12 58.59	−18 2742

Reduction Elements. Zone 98.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 9.2....	−0.108	+0.100	+0.060	−0.106	+0.104	+0.161
9.5....	−0.103	+0.108	+0.262			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	γ Leporis		ζ Leporis		δ Leporis		η Leporis		Piazzi VIII. 227		Piazzi IX. 13	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	298 34 9.40		306 10 9.55		300 10 9.10		306 50 9.45		305 18 9.35		301 44 8.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	43.055	4 59.36	45.830	5 52.64	41.830	4 35.40		6 18.12		5 34.88		4 36.40
II Red. to Mer.	.090	0.22	.855	0.15	.825	0.21		0.14	44.905	0.13		0.18
VI Inclination	.120		.910		.840		47.200	−0.45	.975	−0.18	41.935	−0.45
VII Refraction	.120	1 47.1	.900	1 19.9	.890	1 40.4	.205	1 18.0	.965	1 22.5	.860	1 34.4

	Lalande 18817		κ Hydrae	
	° ′ ″		° ′ ″	
CIRCLE READING.	300 24 8.65		307 10 9.25	
	r	′ ″	r	′ ″
I Microm. Eq.		4 44.02	46.485	6 4.13
II Red. to Mer.		0.20	.460	0.11
VI Inclination	42.310	−0.45	.475	0.18
VII Refraction	.280	1 39.4		1 17.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Leporis	5 40 42.19	11	+0.09	−36.33	298 37 21.9	24.8
ζ Leporis	5 42 48.98	11	+0.09	−36.39	306 14 42.4	25.6
δ Leporis	5 47 25.47	11	+0.09	−36.39	300 13 4.3	26.2
η Leporis	5 52 14.52	11	+0.09	−36.39	306 55 9.3	25.4
δ Ursae Minoris S. P	6 6 34.94	5	+2.98	[−37.67]	54 26	....
Piazzi VIII. 227	8 54 26.25	11	+0.09	−36.41	305 22 21.7	25.0
Piazzi IX. 13	9 7 48.07	8	+0.09	−36.35	301 47 10.2	24.9
1 H. Draconis	9 22 57.51	8	−0.97	[−36.94]	42 52	....
Lalande 18817	9 29 0.40	11	+0.09	−36.38	300 27 13.0	25.2
κ Hydrae	9 35 54.42	11	+0.09	−36.42	307 14 56.7	26.2

h 5.762 .... *dt* .... s −36.375

Hourly rate .... − 0.0043

Adopted Equator Point ....321° 6′ 25.41″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 35	29.630	43.0	40.6
6 31	29.614	42.1	40.3
7 33	29.622	42.0	40.1
8 35	29.632	42.2	40.4
9 38	29.638	43.0	41.4

Note.

60. Close double.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	A = α to 1900.0				D=Z. D. N. to 1895.0				R		
			302°	303°	304°	305°	302°	303°	304°	305°	302° 30′	303° 30′	304° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
303	+0.090	5 30	......	+12.420	+12.542	+12.665	....	+3.23	+2.96	+2.69	91.92	88.49	85.25
304	0.090	6 0	......	12.258	12.383	12.504	....	3.69	3.43	3.16	91.92	88.49	85.25
305	+0.089	6 30	+12.014	12.137	12.260	12.380	+4.47	4.22	3.96	3.71	91.92	88.49	85.25
		7 0	11.939	12.058	12.176	12.293	5.05	4.81	4.57	4.34	91.94	88.51	85.27
		7 30	11.911	12.024	12.135	12.247	5.65	5.44	5.22	5.01	91.98	88.55	85.31
		8 0	11.927	12.032	12.137	12.238	6.31	6.12	5.93	5.73	91.98	88.55	85.31
		8 30	11.989	12.085	12.180	12.274	6.97	6.81	6.66	6.49	91.96	88.53	85.29
		9 0	12.096	12.180	12.263	12.347	7.66	7.53	7.40	7.27	91.90	88.47	85.23
		9 30	12.246	12.318	12.388	+12.459	8.33	8.24	8.15	+8.05	91.83	88.41	85.17
		10 0	+12.436	+12.493	+12.551	......	+9.00	+8.95	+8.89	....	91.77	88.35	85.11

1895 MARCH 19. ZONE 99. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.8	46.2	48.2	50.3	52.5	54.7	c	39 50.38	306 26 10.0	2.3	III	48.010	6 39 23.60	−14 35 21.10	−14 1560
2	8.9	29.6	31.7	34.0	36.1	38.0	c	40 33.88	306 26 "	"	V	41.310	6 40 7.10	14 37 30.32	14 1563
3	6.5	49.0	51.3	53.5	55.7	57.8	c	41 53.46	306 26 "	"	III B	39.280	6 41 26.66	14 41 23.26	14 1573
4	9.1	20.2	22.3	24.4	26.4	28.2	e	41 54.74	306 26 "	"	VII	45.210	6 41 27.95	14 36 16.24	14 1574
5	8.0	48.2	50.3	52.5	54.6	56.9	c	44 52.50	306 4 10.0	2.8	III B	43.990	6 44 25.65	15 1 54.76	14 1599
6	8.9	30.4	32.5	34.5	36.7	39.0	c	45 34.62	306 4 "	"	III A	42.895	6 45 7.78	14 55 47.61	14 1601
7	8.7	36.5	38.6	40.7	43.0	45.1	c	46 40.78	306 24 10.0	3.5	III	47.740	6 46 13.98	14 37 28.54	14 1610
8	9.6	20.7	23.1	25.4	27.5	29.6	c	52 25.26	306 52 10.0	4.1	III B	39.500	6 51 58.48	14 15 21.27	14 1651
9	9.3	29.3	31.5	33.6	35.7	37.9	c	53 33.60	306 52 "	"	III	46.480	6 53 6.82	14 9 53.99	14 1661
10	8.9	24.4	26.5	28.5	30.3	32.6	a	54 58.08	306(42) 10.0	3.4	III	43.635	6 54 31.28	−14 20 49.93	−14 1670

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
11	9.2	28.7	30.3	34.4	36.5	38.6	b_2 c_3	55 38.70	306(42) 10.0	3.4	III B	42.940	6 55 11.89	-14 24 17.31	−14 1674
12	8.0	59.9	2.0	3.8	5.7	8.1	a	56 33.65	305 50 10.0	2.7	III B	45.590	6 56 6.74	15 15 29.75	15 1599
13	9.2	41.1	43.2	45.3	47.6	49.7	c	56 45.38	305 50 "	"	V A	41.025	6 56 18.47	15 10 28.81	15 1602[1]
14	9.2	11.4	13.5	15.5	17.5	19.3	e	56 45.80	305 50 "	"	VII A	40.845	6 56 18.89	15 10 32.21	15 1602[2]
15	......	13.1	15.3	17.3	19.3	21.0	e	57 47.55	305 50 "	"	VII	38.630	6 57 20.64	15 14 30.27	15 1608
16	8.9	52.9	54.9	56.7	58.7	0.9	a	1 26.49	306 16 10.0	3.2	III A	45.025	7 0 59.63	14 43 12.39	14 1710
17	9.3	44.6	46.8	49.0	51 2	53.3	c	1 48.98	306 16 "	"	V B	40.765	7 1 22.10	14 51 2.97	14 1711
18	9.4	41.1	43.2	45.2	47.5	49.6	c	2 45.32	306 30 10.0	3.9	V	44.535	7 2 18.47	14 32 36.40	14 1717
19	9.3	43.3	45.5	47.5	49.3	51.2	e	4 17.78	306 18 10.0	3.1	VII	47.630	7 3 50.91	14 43 38.72	14 1729
20	9.7	51.6	53.7	55.6	57.4	59.7	a	4 25.27	305 18 "	"	I	43.510	7 3 58.40	−14 44 56.74	−14 1731
21	8.6	25.1	27.2	29.3	31.5	33.6	c	7 29.34	306 12 10.0	4.1	III	43.415	7 7 2.45	−14 51 0.09	−14 1760
22	8.7	16.3	20.5	22.7	24.8	27.0	b_3 c_4	8 24.81	306 42 10.0	2.9	III	48.350	7 7 57.97	14 19 25.04	14 1768
23	8.8	36.2	38.4	40.2	42.3	44.0	e	9 10.69	306 42 "	"	VII B	42.280	7 8 43.84	14 24 35.91	14 1776
24	9.1	44.5	46.6	48.5	50.5	52.2	e	10 18.93	306 42 "	"	VII B	46.530	7 9 52.08	14 23 14.80	14 1784
25	8.2	26.7	29.0	30.9	32.8	34.6	e	11 1.26	306 42 "	"	VII C	47.630	7 10 34.40	14 26 6.09	14 1790
26	8.0	58.2	0.4	2.4	6.7	8.3	c_3 d_2	11 58.20	306 42 "	"	VI	46.635	7 11 31.35	14 19 59.83	14 1797
27	9.5	26.9	29.0	31.1	33.1	34.8	e	13 1.18	304 46 10.0	2.7	VII	42.950	7 12 34.11	16 17 16.30	16 1870
28	9.4	26.1	28.3	30.0	31.8	34.3	a	14 59.69	306 52 10.0	3.4	III	39.335	7 14 32.85	14 12 19.92	14 1824
29	8.9	26.0	28.1	30.2	32.1	34.0	e	15 0.55	306 40 10.0	3.5	VII	40.385	7 14 33.69	14 24 0.82	14 1825
30	9.5	19.2	21.3	23.2	25.0	27.5	a	17 52.89	306 24 10.0	4.3	I A	39.480	7 17 26.00	−14 37 4.07	−14 1862
31	9.4	32.9	35.0	37.0	38.8	41.0	a	19 6.60	306 24 "	"	....	....	7 18 39.70	−14 41 13	−14 1872
32	8.8	54.8	56.9	59.0	1.2	3.3	c	19 59.04	306 24 "	"	V	49.620	7 19 32.14	14 37 5.62	14 1880
33	8.1	55.2	57.4	59.6	1.7	3.8	c	20 59.54	306 24 "	"	V B	46.875	7 20 32.63	−14 41 12.34	−14 1887

Reduction Elements. Zone 99.

1895.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
March 19.3....	-0.126	+0.161	+0.175	−0.118	+0.156	+0.175
19.3....	-0.109	+0.152				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

CIRCLE READING.	ξ² Canis Majoris		θ Canis Majoris		γ Canis Majoris		Piazzi VII. 116	
	° ′ ″ 298 10 6.65		° ′ ″ 309 8 6.65		° ′ ″ 305 34 6.50		° ′ ″ 309 42 7.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.745	5 11.90	43.310	5 3.94		4 56.92	42.525	4 49.27
II Red. to Mer......	.730	0.23	.300	0.11		0.14	.570	0.10
VI Inclination	.790		.380		42.925	−0.45	.580	
VII Refraction.......	.735	1 48.6	.345	1 11.8	43.010	1 21.6	.600	1 10.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
23 H. Camelopardalis.	6 29 3.10	8	−0.64	[−39.59]	40 44	....
ξ² Canis Majoris.....	6 31 19.60	11	+0.12	−39.55	298 13 30.2	30.7
θ Canis Majoris.....	6 49 59.17	11	+0.12	−39.62	309 11 58.9	28.6
γ Canis Majoris.....	6 59 41.00	7	+0.12	−39.62	305 37 41.5	28.1
Piazzi VII. 116	7 23 36.16	11	+0.12	−39.61	309 45 46.0	28.8

h 6.936............*dt*..................... s −39.600

Hourly rate 0.0000

Adopted Equator Point..........321° 6′ 29″.05

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 30	29.800	45.8	44.6
7 25	29.808	44.2	43.8

Note.
Sky very hazy. Seeing steady but faint stars very difficult.

REDUCTION TABLE FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				$D =$ Z. D. N. to 1895.0			
			304°	305°	306°	307°	304°	305°	306°	307°
°	s	h m	s	s	s	s	″	″	″	″
304	+0.120	6 30	......	+12.562	+12.679	+12.795	....	+4.22	+3.94	+3.67
305	0.119	7 0	+12.349	12.465	12.578	12.691	+5.29	5.03	4.76	4.49
306	0.120	7 30	+12.296	+12.404	+12.511	+12.619	+6.12	+5.87	+5.61	+5.36
307	+0.119									

APPARENT RIGHT ASCENSION.	R			
	304° 30′	305°	306°	307°
h m	″	″	″	″
6 30	85.07	83.50	80.50	77.62
7 0	85.17	83.60	80.59	77.71
7 30	85.29	83.71	80.70	77.82

1895 MARCH 21. ZONE 100. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	......	2.4	4.6	6.7	10.7	12.5	c_3 d_2	33 2.38	306	52	10.0	8.4	V	44.760	6 32 35.29	−14 10 23.77	−14 1511[1]
2	......	28.0	30.3	32.3	34.2	36.0	e	33 2.66	306	52	"	"	VII	44.560	6 32 35.57	14 10 27.81	14 1511[2]
3	8.0	48.4	49.9	54.1	56.3	58.4	b_2 c_3	34 58.42	306	38	10.0	8.5	III B	44.030	6 34 31.29	14 27 52.56	14 1524
4	8.2	30.2	32.4	34.5	36.7	38.7	c	35 34.50	306	38	"	"	III A	42.140	6 35 7.36	14 22 0.61	14 1529
5	9.0	43.5	45.6	47.7	49.9	52.0	c	36 47.74	306	38	"	"	III B	47.260	6 36 20.60	14 26 51.34	14 1535
6	8.0	38.0	40.1	42.2	44.3	46.6	c	37 42.24	306	38	"	"	III A	40.010	6 37 15.11	14 22 42.37	14 1542
7	8.9	34.2	36.4	38.5	40.6	42.8	c	40 38.50	304	28	10.0	8.0	III B	45.340	6 40 11.10	16 37 35.97	16 1586
8	......	7.9	10.1	12.3	14.4	16.5	c	41 12.24	304	28	"	"	III	44.550	6 40 44.84	16 34 37.55	16 1591
9	9.0	57.0	59.0	1.3	3.6	5.6	c	42 1.30	306	48	10.0	8.1	V A	43.025	6 41 34 17	14 11 46.16	14 1575
10	7.7	40.3	42.4	44.5	46.7	48.8	c	42 44.54	306	48	"	"	III B	40.450	6 42 17.39	−14 19 4.19	−14 1584
11	9.0	35.8	38.1	40.3	42.4	44.4	c	44 40.20	306	48	"	"	V	43.240	6 44 13.06	−14 14 58.02	−14 1595
12	8.4	10.4	12.7	14.6	16.5	18.4	e	44 45.01	306	48	"	"	VII B	48.090	6 44 17.86	14 16 38.73	14 1597
13	......	54.7	56.9	59.0	1.2	3.4	c	45 59.04	306	48	"	"	III C	50.400	6 45 31.88	14 19 7.52	14 1605
14	9.4	42.6	44.8	46.9	49.1	51.3	c	46 46.94	306	48	"	"	III C	48.850	6 46 19.78	14 19 37.58	14 1613
15	9.0	50.9	53.0	54.8	56.7	59.0	a	49 24.52	306	40	10.0	7.8	I C	45.115	6 48 57.33	14 28 50.81	14 1627
16	8.1	45.5	47.5	49.3	51.3	53.5	a	50 19.04	306	40	"	"	I A	43.930	6 49 51.87	14 19 32.22	14 1635
17	9.2	43.0	45.1	46.9	48.8	51.1	a	51 16.60	306	40	"	"	I	48.160	6 50 49.42	14 21 25.90	14 1640
18	9.3	37.0	39.0	41.4	43.5	45.5	c	51 41.28	306	40	"	"	III A	40.320	6 51 14.10	14 20 42.37	14 1644
19	6.0	24.4	26.5	28.4	30.4	32.2	e	51 58.91	307	8	10.0	8.0	VII	43.750	6 51 31.78	13 54 50.59	13 1741
20	9.1	33.6	35.1	39.4	41.4	43.6	b_2 c_3	53 43.63	306	12	10.0	8.3	III A	41.060	6 53 16.39	−14 48 29.96	−14 1662
21	9.4	53.5	55.8	57.8	1.9	3.7	c_3 d_2	53 53.53	306	12	"	"	V A	39.380	6 53 26.29	−14 49 2.40	−14 1663
22	8.8	52.4	54.5	56.7	58.8	1.0	c	54 56.68	306	12	"	"	III A	37.925	6 54 29.44	14 49 30.63	14 1669
23	8.2	42.5	44.7	46.9	49.0	51.2	c	55 46.86	306	12	"	"	III	37.175	6 55 19.61	14 53 0.02	14 1675
24	9.1	55.4	57.5	59.3	1.1	3.4	a	57 29.04	306	12	"	"	I B	42.370	6 57 1.78	14 54 34.38	14 1687
25	8.9	24.0	26.0	27.9	29.8	32.1	a	57 57.66	306	12	"	"	I B	39.690	6 57 30.40	14 55 26.00	14 1688
26	9.0	22.8	24.9	27.0	29.3	31.4	c	1 27.08	305	38	10.0	7.6	III	46 340	7 0 59.75	15 24 8.31	15 1640
27	9.0	26.4	28.5	30.6	32.8	34.9	(c)	5 30.64	306	26	10.0	8.5	V	42.570	7 5 3.39	14 37 20.02	14 1738
28	8.3	11.0	13.0	15.2	17.4	19.5	c	6 15.22	306	26	"	"	V	46.160	7 5 47.97	14 36 11.42	14 1744
29	9.1	16.7	18.9	21.0	23.2	25.4	c	7 21.04	306	56	9.5	7.5	III A	41.240	7 6 53.84	14 4 30.68	14 1759
30	9.3	36.4	38.8	40.8	43.0	45.0	c	7 40.80	306	56	"	"	V B	38.465	7 7 13.59	−14 11 52.77	−14 1761
31	9.6	49.9	......	54.2	58.6	0.2	c_3 d_2	8 50.01	306	36	10.0	8.0	V	46.220	7 8 22.77	−14 26 11.12	−14 1772
32	9.0	16.8	19.1	21.0	23.0	24.8	e	8 51.40	306	36	"	"	VII	43.415	7 8 24.16	14 27 5.15	14 1773
33	9.0	27.9	30.1	32.1	34.2	36.0	e	10 1.96	302	56	10.0	7.6	VII	44.420	7 9 34.30	18 6 57.07	18 1735
34	8.5	10.2	12.3	14.0	16.2	18.3	a	11 43.82	306	44	10.0	9.1	III	42.665	7 11 16.59	14 19 19.22	14 1795
35	8.9	3.7	5.9	8.0	10.1	12.3	c	12 8.00	306	22	10.0	9.1	V	44.180	7 11 40.73	14 40 51.63	14 1798
36	8.7	50.0	52.1	54.0	55.9	57.8	e	12 24.39	306	22	"	"	V	41.030	7 11 57.11	14 41 52.18	14 1803
37	7.8	24.7	26.8	28.7	30.7	32.6	e	12 59.13	306	22	"	"	VII	46.300	7 12 31.86	14 40 11.45	14 1810
38	8.5	5.4	7.4	9.6	11.6	13.3	e	13 39.89	306	22	"	"	V	45.840	7 13 12.61	14 40 27.26	14 1817
39	6.0	24.0	26.3	28.2	32.5	34.2	c_3 d_2	15 23.99	304	50	10.0	7.8	V	45.850	7 14 56.54	16 12 25.75	16 1898
40	9.1	4.5	6.6	8.4	10.1	12.6	a	17 38.20	305	48	10.0	7.5	I B	41.000	7 17 10.84	−15 19 10.14	−15 1780
41	9.3	52.8	54.7	56.5	58.4	0.7	a	18 26.36	305	48	"	"	I	45.040	7 17 59.01	−15 14 39.00	−15 1788
42	8.8	33.2	35.3	37.1	38.9	41.2	a	19 6.80	306	22	10.0	8.1	I	43.185	7 18 39.51	14 41 13.04	14 1872
43	9.1	3.4	5.5	7.6	9.8	12.0	c	19 7.66	306	22	"	"	III	(46).790	7 18 40.37	14 40 4.40	14 1873
44	8.6	31.0	33.2	35.4	39.7	41.3	c_3 d_2	19 31.10	306	2	10.0	7.5	V	43.290	7 19 3.77	15 1 13.28	14 1876
45	9.0	19.0	21.4	23.5	25.6	27.8	c	21 23.46	306	48	10.0	8.5	III B	50.630	7 20 56.20	14 16 4.03	14 1889
46	9.2	17.2	19.4	21.4	23.7	25.9	c	22 21.52	307	6	10.0	7.7	III	43.160	7 21 54.30	13 57 13.60	13 2012
47	8.7	37.5	39.5	41.3	43.2	45.5	a	26 11.08	306	16	10.0	8.4	III	42.840	7 25 43.76	14 47 23.05	14 1932
48	9.4	22.1	24.2	26.3	28.5	30.5	c	26 26.32	306	16	"	"	V	47.630	7 25 59.00	14 45 51.58	14 1935
49	7.9	8.4	10.5	12.7	14.9	17.0	c	27 12.70	306	16	"	"	V	49.500	7 26 45.38	14 45 16.00	14 1944
50	9.1	57.7	59.2	3.5	5.7	7.8	b_2 c_3	28 7.79	306	16	"	"	III B	41.765	7 27 40.46	−14 50 58.21	−14 1952
51	9.3	15.9	17.8	19.9	24.2	25.7	c_3 d_2	28 15.69	306	16	"	"	VI	46.470	7 27 48.37	−14 46 14.64	14 1953
52	9.4	31.3	33.5	35.4	39.7	41.3	c_3 d_2	29 31.24	306	50	10.0	7.6	V	46.850	7 29 3.98	14 12 6.63	14 1969
53	6.	5.0	7.1	9.2	11.1	13.0	e	29 39.56	306	50	"	"	VII C	47.090	7 29 12.29	14 18 27.93	14 1971
54	7.0	21.8	23.8	25.7	27.6	29.8	a	31 55.35	306	46	10.0	7.6	I	46.335	7 31 28.07	14 16 16.70	14 1999
55	9.1	4.1	5.5	9.8	11.9	14.0	b_2 c_3	32 14.06	306	46	"	"	III	45.865	7 31 46.78	14 16 26.38	14 2012
56	......	19.0	21.2	23.3	27.6	29.2	c_3 d_2	32 19.06	306	46	"	"	V C	47.480	7 31 51.78	14 22 21.96	14 2016
57	9.1	4.2	6.4	8.5	10.4	12.2	e	32 38.82	306	46	"	"	V B	43.850	7 32 11.54	−14 20 19.21	−14 2029

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
58	9.3	12.9	15.1	17.0	18.7	21.0	a	34 46.52	307 0 10.0 7.7	III (B) 41.630	7 34 19.26	−14 7 1.71	−14 2066
59	9.1	43.8	45.9	48.0	50.2	52.3	c	34 48.04	307 0 “ “	V C 46.210	7 34 20.78	14 8 46.59	14 2067
60	9.1	38.0	40.2	42.3	44.5	46.5	c	35 42.30	307 0 “ “	III A 43.350	7 35 15.05	−14 0 0.56	−13 2160
61	9.4	29.9	32.1	34.3	36.2	38.4	c	36 34.18	307 0 “ “	III A 43.220	7 36 6.93	−14 0 3.40	−13 2163
62	9.1	39.5	41.7	43.8	45.9	48.0	c	38 43.78	307 4 10.0 8.0	III B 40.630	7 38 16.52	14 3 22.06	13 2183
63	9.1	32.1	34.3	36.4	38.5	40.6	c	39 36.38	307 4 “ “	III A 38.450	7 39 9.13	13 57 35.74	13 2194
64	8.2	46.5	48.5	50.2	52.2	54.5	a	41 20.02	306 34 10.0 8.0	I A 41.650	7 40 52.71	14 26 36.00	14 2193
65	7.9	16.1	18.3	20.5	22.7	24.8	c	41 20.48	306 34 “ “	III A 40.850	7 40 53.17	14 26 51.64	14 2194
66	9.3	44.1	46.3	47.9	49.8	52.1	a	43 17.68	306 34 “ “	I B 44.510	7 42 50.36	14 32 10.18	14 2212
67	9.3	29.2	31.4	33.5	35.8	37.9	c	43 33.56	305 58 10.6 8.7	III B 49.300	7 43 6.18	15 6 39.71	15 2050
68	9.1	31.8	33.7	35.7	37.6	39.7	a	45 5.41	305 58 “ “	I A 41.150	7 44 38.03	15 2 47.91	14 2227
69	8.2	17.1	19.2	21.4	23.5	25.6	c	45 21.36	305 58 “ “	III 42.280	7 44 53.98	15 5 41.31	14 2229
70	8.9	49.8	52.0	54.2	56.2	58.4	c	45 54.12	305 58 “ “	III B 40.195	7 45 26.73	15 9 35.32	−15 2075
71	9.0	21.7	23.6	25.5	27.2	29.6	a	47 55.17	306 24 10.0 7.9	I A 37.500	7 47 27.83	−14 37 58.52	−14 2248
72	7.5	36.3	38.4	40.3	42.1	44.3	a	48 9.93	306 24 “ “	III A 45.740	7 47 42.60	14 35 20.79	14 2250
73	9.3	19.9	22.2	23.9	25.9	28.1	a	48 53.67	306 24 “ “	I C 43.670	7 48 26.32	14 45 42.17	14 2258
74	9.1	55.0	57.2	59.3	1.6	3.6	c	48 59.34	306 24 “ “	III C 46.135	7 48 31.99	14 44 54.91	14 2260
75	9.3	28.9	31.0	33.1	35.4	37.5	c	49 33.18	306 24 “ “	III B 45.070	7 49 5.84	14 42 2.60	14 2263
76	9.4	24.0	26.3	28.3	30.6	32.6	c	51 28.36	305 54 10.0 7.9	III 44.340	7 51 0.97	15 9 4.88	15 2132
77	8.7	0.4	2.5	4.7	6.8	9.0	c	53 4.68	306 48 10.0 8.0	III B 39.730	7 52 37.37	14 19 45.25	14 2293
78	8.8	31.1	33.1	35.2	37.1	39.3	a	53 4.77	306 48 “ “	I 44.380	7 52 37.47	14 15 1.70	14 2292
79	.....	31.3	33.4	35.6	37.7	39.7	c	53 35.54	306 48 “ “	III B 38.045	7 53 8.23	14 20 17.80	14 2301
80	8.9	51.7	53.9	55.7	57.6	59.8	a	56 25.38	306 32 10.0 7.9	I 42.160	7 55 58.05	−14 31 46.25	−14 2319
81	8.7	54.9	57.0	58.8	0.6	3.0	a	57 28.50	306 32 “ “	I A 40.680	7 57 1.17	−14 29 0.59	−14 2332
82	9.4	21.6	23.6	25.5	27.5	29.6	a	57 55.21	306 32 “ “	I B 38.070	7 57 27.87	14 36 19.19	14 2335
83	9.3	25.4	27.6	29.7	31.9	34.0	c	58 29.72	306 0 10.0 8.4	III C 43.200	7 58 2.32	15 9 55.50	15 2211
84	8.9	18.2	20.4	22.5	24.6	26.7	c	59 22.48	306 0 “ “	III 40.650	7 58 55.09	15 4 18.02	14 2348
85	9.5	6.4	8.5	10.4	12.2	14.5	a	0 40.11	306 0 “ “	I A 41.000	8 0 12.73	15 0 56.76	14 2357
86	9.1	41.4	43.5	45.6	47.9	50.1	c	0 45.70	306 0 “ “	V B 44.180	8 0 18.31	15 6 24.80	14 2359
87	9.2	15.6	18.0	20.1	21.9	23.7	e	0 50.24	306 0 “ “	VII A 43.090	8 0 22.86	15 0 17.09	14 2360
88	9.3	12.9	15.0	17.2	19.4	21.4	c	2 17.18	306 44 10.0 9.0	V 48.440	8 1 49.86	14 17 47.62	14 2368
89	9.3	52.9	55.0	57.3	59.4	1.5	c	3 57.22	306 44 “ “	III B 45.660	8 3 29.90	14 21 54.97	14 2382
90	8.2	53.9	56.2	58.4	0.5	2.7	c	4 58.34	306 44 “ “	III (A) 39.710	8 4 31.02	−14 17 21.05	−14 2393
91	8.5	45.7	47.9	50.0	52.2	54.3	c	5 50.02	306 44 “ “	III 44.010	8 5 22.70	−14 19 13.51	−14 2398
92	9.3	8.9	11.0	12.9	14.7	17.0	a	7 42.52	306 44 “ “	I B 45.275	8 7 15.20	14 22 3.27	14 2406
93	9.6	35.4	37.3	39.1	40.9	43.3	a	8 8.82	306 44 “ “	I B 43.210	8 7 41.49	14 22 43.03	14 2410
94	8.9	59.2	1.5	3.3	5.2	7.4	a	8 32.95	306 44 “ “	III B 39.500	8 8 5.62	14 23 54.82	14 2419
95	9.0	32.4	34.5	36.6	38.8	40.9	c	8 36.64	306 44 “ “	V A 42.075	8 8 9.32	14 16 37.07	14 2420
96	9.5	12.2	14.4	16.3	18.1	20.0	e	8 46.68	306 44 “ “	VII 41.570	8 8 19.36	14 20 1.90	14 2421
97	8.7	19.3	21.7	23.6	25.6	27.6	e	9 53.59	303 42 10.0 8.6	VII (42).780	8 9 25.97	17 21 47.92	17 2399
98	9.2	19.3	20.9	24.8	27.1	29.2	b_2 c_3	12 29.26	306 28 10.0 8.2	III B 43.990	8 12 1.91	14 38 31.08	14 2452
99	9.1	42.0	44.2	46.4	50.5	52.3	c_3 d_2	12 42.07	306 28 “ “	V B 44.040	8 12 14.72	14 38 30.43	14 2457
100	8.2	46.3	48.5	50.5	52.7	54.9	c	13 50.58	306 28 “ “	III B 39.870	8 13 23.22	−14 39 49.62	−14 2460
101	9.0	56.3	58.4	0.4	2.7	4.7	c	15 0.50	306 28 “ “	III A 39.445	8 14 33.15	−14 33 30.71	−14 2471
102	8.9	51.2	53.4	55.5	57.7	59.7	c	15 55.50	306 28 “ “	III 45.495	8 15 28.14	14 34 49.58	14 2475
103	8.0	3.6	5.8	7.9	10.0	12.2	c	17 7.90	306 28 “ “	III B 41.025	8 16 40.53	14 39 29.57	14 2483
104	8.8	32.9	34.9	36.7	38.6	40.9	a	36 6.50	306 6 10.0 7.7	I 46.150	8 35 39.12	14 56 44.28	14 2610
105	8.8	45.6	47.8	49.8	52.1	54.2	c	36 49.90	306 34 10.0 7.6	III 41.775	8 36 22.55	14 30 7.80	14 2615
106	8.7	9.1	11.1	13.0	14.8	17.0	a	38 42.67	306 24 10.0 8.3	I A 38.170	8 38 15.31	14 38 2.69	14 2629
107	8.9	52.2	54.3	56.4	58.6	0.8	c	38 56.46	306 24 “ “	III A 37.640	8 38 29.10	14 38 13.23	14 2630
108	8.8	29.9	31.5	35.7	37.8	39.9	b_2 c_3	39 39.96	306 24 “ “	III B 45.510	8 39 12.60	14 42 10.90	14 2631
109	9.1	46.9	49.2	51.3	53.4	55.6	c	39 51.28	306 24 “ “	V A 41.515	8 39 23.93	14 36 59.27	14 2633
110	8.7	49.4	51.5	53.5	55.7	57.9	c	41 53.60	307 4 10.0 8.5	III 42.420	8 41 26.30	−13 59 55.22	−13 2670
111	8.9	9.6	11.9	14.0	16.1	18.4	c	43 14.00	305 38 10.0 7.5	III 43.920	8 42 46.58	−15 25 31.24	−15 2591
112	8.0	58.2	0.5	2.6	4.7	6.8	c	45 2.56	305 56 10.0 7.7	III B 41.220	8 44 35.16	15 11 36.45	15 2597
113	9.3	19.5	21.6	23.7	25.9	28.0	c	45 23.74	305 56 “ “	V A 39.240	8 44 56.35	15 5 46.23	14 2665
114	8.1	9.5	11.7	13.8	16.0	18.0	c	46 13.80	306 50 10.0 7.9	III 40.920	8 45 46.48	14 14 26.23	14 2669
115	8.9	26.8	28.9	31.0	33.2	35.3	c	48 31.04	306 34 10.0 8.4	III 41.540	8 48 3.71	14 30 15.48	14 2688
116	9.2	10.4	12.3	14.0	15.9	18.3	a	49 43.87	306 16 10.0 8.6	I B 42.730	8 49 16.51	14 51 7.09	14 2696
117	8.9	7.5	9.5	11.3	13.2	15.6	a	50 41.09	306 16 “ “	I A 44.870	8 50 13.74	14 43 57.95	14 2700
118	9.2	0.9	3.0	5.0	7.4	9.5	c	51 5.16	306 58 10.0 8.3	V A 39.090	8 50 37.86	14 3 47.67	13 2711
119	8.0	37.8	39.9	42.0	43.9	45.7	e	51 12.38	306 58 “ “	VII A 46.370	8 50 45.09	14 1 27.97	13 2713
120	9.2	57.4	59.5	3.6	5.3	8.0	c_4 d_3	51 55.22	306 58 “ “	VI 43.280	8 51 27.92	−14 5 42.54	−13 2717
121	9.1	54.5	56.7	58.8	0.9	3.1	c	52 58.80	306 58 “ “	III C 47.515	8 52 31.50	−14 10 47.81	−14 2709
122	9.2	53.8	55.9	58.1	0.4	2.4	c	53 58.12	306 4 10.0 8.0	V 45.495	8 53 30.75	14 59 3.12	14 2714
123	9.1	41.3	43.5	45.7	47.8	49.9	c	55 45.64	307 0 9.5 7.6	V (A) 46.365	8 55 18.35	13 59 29.94	13 2736
124	8.9	12.2	14.3	16.2	18.0	20.2	a	55 45.77	307 0 “ “	I C 49.055	8 55 18.47	14 8 19.60	13 2735
125	8.9	44.2	46.3	48.0	49.9	52.3	a	57 17.72	307 0 “ “	I B 46.560	8 56 50.43	14 5 54.57	13 2743
126	9.3	19.3	21.6	23.6	25.8	27.8	c	57 23.62	307 0 “ “	V 48.765	8 56 56.33	14 1 59.28	13 2744
127	8.8	42.3	44.5	46.6	48.9	51.0	c	58 46.66	306 36 10.0 7.6	III 41.410	8 58 19.34	14 28 21.27	14 2732
128	8.5	16.0	18.2	20.3	22.4	24.6	c	59 20.30	307 2 10.0 7.9	III 40.870	8 58 53 01	14 2 30.50	13 2751
129	8.9	49.0	51.0	52.8	54.8	56.9	a	1 22.50	306 52 10.0 7.5	I 46.690	9 0 55.21	14 10 39.48	14 2741
130	8.8	26.5	28.7	30.9	33.0	35.0	c	1 30.82	306 40 10.0 7.5	III 43.285	9 1 3.51	−14 23 45.93	−14 2743

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
131	9.0	49.3	51.3	53.1	54.9	57.2	a	3 22.73	307	2	10.0	7.9	I	41.460	9 2 55.45	−14 2 19.76	−13 2769
132	9.4	34.9	36.9	38.7	40.5	42.9	a	4 8.48	306	6	10.0	8.1	I	41.760	9 3 41.13	14 58 16.67	14 2755
133	8.0	9.3	11.5	13.5	15.8	18.0	c	4 13.62	306	20	10.0	7.6	III	42.345	9 3 46.29	14 44 5.60	14 2757
134	9.4	22.7	24.8	26.6	28.4	30.7	a	5 56.27	306	36	10.0	7.8	I A	42.700	9 5 28.96	14 24 43.43	14 2767
135	8.5	35.0	37.3	39.2	40.9	43.3	a	6 8.78	306	36	"	"	III B	47.780	9 5 41.47	14 29 34.77	14 2769
136	8.7	28.0	30.2	31.9	33.7	36.1	a	7 1.62	306	36	"	"	I C	49.340	9 6 34.31	14 32 18.01	14 2773
137	9.1	26.5	28.7	30.3	32.4	34.7	a	8 0.21	306	8	10.0	7.7	I A	45.470	9 7 32.87	14 51 52.15	14 2776
138	8.3	8.4	10.3	12.2	14.0	16.5	a	8 41.99	306	8	"	"	I C	48.885	9 8 14.64	15 0 28.54	14 2780
139	9.1	2.5	4.8	6.9	9.1	11.1	c	9 6.88	306	46	9.5	7.0	III	45.590	9 8 39.59	14 17 4.01	14 2781
140	7.9	41.9	44.0	46.2	48.4	50.6	c	9 46.22	306	46	"	"	III	46.220	9 9 18.93	−14 16 52.10	−14 2786
141	8.0	35.0	36.9	38.7	40.6	43.0	a	11 8.49	306	26	10.0	7.6	I	47.200	9 10 41.18	−14 36 33.47	−14 2793
142	9.3	8.1	10.2	11.8	13.8	16.3	a	12 41.61	307	0	10.0	7.4	I A	42.030	9 12 14.35	14 0 57.23	13 2807
143	7.5	46.0	48.1	50.4	52.7	54.7	c	12 50.38	307	0	"	"	III C	46.110	9 12 23.11	14 9 20.67	13 2808
144	9.1	10.8	12.9	15.1	17.3	19.4	c	13 15.10	307	0	"	"	V A	42.300	9 12 47.84	14 0 52.60	13 2809
145	9.2	12.4	14.6	16.8	19.0	21.2	c	14 16.80	306	18	10.0	7.1	V	46.800	9 13 49.49	14 44 43.49	14 2813
146	9.2	30.5	32.6	34.8	36.9	39.1	c	15 34.78	306	44	10.0	7.9	III B	47.630	9 15 7.50	14 21 39.75	14 2819
147	9.0	9.6	11.6	13.8	16.0	18.1	c	16 13.82	306	44	"	"	III	44.870	9 15 46.54	14 19 19.11	14 2824
148	9.2	54.3	56.5	58.5	0.5	2.2	e	16 28.81	306	14	10.0	7.3	V	46.040	9 16 1.50	14 48 58.74	14 2826
149	9.3	46.4	48.4	50.1	52.0	54.4	a	18 19.98	306	0	10.0	7.2	I B	42.820	9 17 52.65	15 7 14.73	14 2837
150	9.0	35.2	37.2	39.5	41.7	43.8	c	18 39.48	306	0	"	"	III (B)	42.890	9 18 12.15	−15 7 13.92	−14 2840
151	9.1	32.0	34.1	36.3	38.4	40.6	c	19 36.28	306	24	10.0	8.2	V	42.215	9 19 8.98	−14 40 12.04	−14 2842
152	9.3	31.7	34.0	35.8	37.6	40.0	a	21 5.42	306	52	10.0	7.5	III	42.360	9 20 38.16	14 12 8.35	14 2846
153	9.2	11.7	13.3	17.5	19.6	21.8	b_2 c_3	21 21.77	306	52	"	"	III B	47.040	9 20 54.51	14 13 52.40	14 2850
154	9.0	54.6	56.8	58.8	0.8	2.6	e	21 29.23	307	0	10.0	8.0	VII B	46.860	9 21 1.98	14 5 55.57	13 2851
155	8.2	23.8	26.0	28.1	32.3	33.9	c_3 d_2	22 23.82	307	0	"	"	V	45.200	9 21 56.57	14 3 13.93	13 2855
156	8.3	31.1	33.4	35.5	37.6	39.7	c	23 35.46	306	38	10.0	7.3	V	43.310	9 23 8.19	14 25 51.85	14 2860
157	8.9	45.4	48.1	49.6	53.7	55.9	b_1-c_2	25 58.12	305	52	10.0	7.2	II	45.950	9 25 30.80	15 11 3.36	14 2865
158	8.0	1.1	3.5	5.5	7.7	9.9	c	26 5.54	305	52	"	"	V A	44.690	9 25 38.23	15 8 13.26	14 2867
159	9.1	35.6	37.7	40.2	42.2	44.4	c	26 40.02	305	52	"	"	V C	44.405	9 26 12.70	15 17 59.98	15 2821
160	9.1	37.8	40.0	42.2	44.3	46.4	c	27 42.14	305	32	10.0	7.0	III	44.310	9 27 14.80	−15 31 36.55	−15 2824
161	9.4	40.7	42.8	44.9	47.1	49.1	c	28 44.92	307	2	9.5	6.6	III	44.885	9 28 17.69	−14 1 22.02	−13 2878
162	9.0	10.9	13.0	15.2	17.4	19.5	c	29 15.20	306	8	10.0	7.5	V B	41.010	9 28 47.90	14 59 52.36	14 2883
163	9.3	49.9	52.1	54.2	56.6	58.7	c	29 54.30	306	8	"	"	III	41.700	9 29 27.01	14 56 25.22	14 2886
164	10.0	37.7	39.8	41.5	43.4	45.6	a	31 11.21	306	50	10.0	7.2	III	40.760	9 30 43.97	14 14 41.76	14 2893
165	8.9	48.7	51.0	53.0	55.3	57.5	c	31 53.10	306	42	10.0	7.7	III	43.510	9 31 25.85	14 21 49.28	14 2897
166	8.7	25.3	27.4	29.3	31.0	33.4	a	32 58.91	306	42	"	"	I B	46.460	9 32 31.66	14 24 6.28	14 2904
167	8.8	19.6	21.7	23.9	25.9	28.4	c	33 23.90	305	50	9.3	6.3	III B	50.070	9 32 56.60	15 15 1.00	15 2844
168	9.4	0.4	2.5	4.6	6.9	8.9	c	34 4.66	305	50	"	"	III C	47.110	9 33 37.35	15 19 10.92	15 2850
169	9.4	35.3	37.4	39.3	41.3	43.1	e	34 9.64	305	50	"	"	VII A	42.930	9 33 42.35	15 10 49.81	14 2907
170	6.	53.7	55.8	58.0	0.1	2.2	c	35 57.96	307	10	10.0	7.0	III	46.970	9 35 30.75	−13 52 42.92	−13 2917
171	9.7	45.4	47.5	49.7	51.9	54.0	c	36 49.70	306	20	9.2	6.0	V	41.750	9 36 22.44	−14 44 26.83	−14 2919
172	9.1	4.7	6.9	9.1	11.3	13.4	c	38 9.08	306	30	10.0	7.2	III A	39.540	9 37 41.84	14 31 53.06	14 2925
173	8.5	38.3	40.4	42.5	44.4	46.2	e	38 12.80	306	30	"	"	V	43.530	9 37 45.56	14 33 51.53	14 2927
174	8.8	18.2	20.3	22.4	24.9	26.9	c	39 22.54	306	20	10.0	6.9	V	46.560	9 38 55.29	14 42 54.28	14 2933
175	9.0	39.9	42.0	44.3	46.5	48.6	c	40 44.26	306	32	10.0	6.7	III	40.820	9 40 17.03	14 32 43.91	14 2938
176	8.3	20.2	22.3	24.2	26.0	28.3	a	41 53.79	306	56	10.8	7.8	III	43.910	9 41 26.58	14 7 42.81	13 2946
177	9.5	2.4	4.6	6.8	8.9	11.0	c	42 6.74	306	56	"	"	III A	44.260	9 41 39.54	14 4 21.44	13 2948
178	8.9	1.5	3.5	5.4	7.3	9.6	a	43 35.09	306	36	10.0	7.5	I	42.290	9 43 7.87	14 28 15.22	14 2951
179	9.0	46.9	49.2	51.3	53.4	55.5	c	43 51.26	305	30	10.0	6.7	V	43.500	9 43 23.97	15 33 56.47	15 2902
180	9.4	14.5	16.9	18.9	21.0	23.4	c	44 18.94	305	30	"	"	V B	41.690	9 43 51.65	−15 37 45.00	−15 2906
181	8.6	6.2	8.2	10.0	11.9	14.2	a	46 39.87	305	40	10.0	7.6	I	41.020	9 46 12.60	−15 24 42.84	−15 2916
182	9.0	48.0	50.2	52.3	54.5	56.7	c	46 52.34	306	56	10.0	7.3	V B	37.105	9 46 25.14	14 13 9.16	14 2960
183	9.2	55.5	57.6	59.9	2.1	4.1	c	47 59.84	306	56	"	"	III	46.125	9 47 32.65	14 7 2.27	13 2969
184	9.3	38.1	40.1	42.1	43.8	46.0	a	55 11.65	306	36	10.0	7.6	I	41.410	9 54 44.47	14 28 34.49	14 2992
185	9.3	16.2	18.4	20.6	22.8	25.0	c	55 20.60	306	58	10.5	8.4	V	44.725	9 54 53.44	14 5 30.12	13 3003
186	8.6	26.9	28.8	30.9	32.8	35.1	a	57 0.60	306	6	10.5	8.3	I	41.985	9 56 33.39	14 58 24.64	14 3002
187	8.9	13.0	15.0	17.3	19.4	21.5	c	57 17.24	306	6	"	"	III	47.430	9 56 50.04	14 56 40.74	14 3003
188	8.8	1.4	3.7	5.8	8.0	10.1	c	58 5.80	306	24	10.0	7.1	V	46.485	9 57 38.62	14 38 59.39	14 3010
189	9.3	59.1	1.3	3.3	5.6	7.7	c	59 3.40	306	10	8.8	6.5	III A	43.520	9 58 36.21	14 50 42.99	14 3012
190	9.0	14.5	16.6	18.8	20.9	23.2	c	59 18.80	306	10	"	"	V B	42.980	9 58 51.60	−14 57 22.12	−14 3013
191	9.0	10.8	13.0	15.0	16.8	18.6	e	59 45.26	306	20	10.0	7.0	VII	42.110	9 59 18.08	−14 44 24.10	−14 3017
192	9.1	15.0	17.2	19.4	21.6	23.7	c	3 19.38	306	26	10.0	7.9	III	44.580	10 2 52.22	14 37 36.08	14 3032
193	9.1	48.9	51.2	53.2	55.5	57.6	c	3 53.28	306	26	"	"	III	45.200	10 3 26.12	14 37 24.31	14 3033
194	8.8	46.0	47.9	49.8	51.6	54.0	a	5 19.47	306	48	10.0	7.0	I	42.360	10 4 52.33	14 16 17.98	14 3041
195	9.4	43.0	45.2	47.2	49.2	50.9	e	7 17.50	306	8	10.0	7.5	VII	43.960	10 6 50.34	14 55 50.32	14 3050
196	9.4	22.3	24.4	26.6	30.7	32.4	c_3 d_2	8 22.28	306	54	10.0	7.0	V A	40.900	10 7 55.16	14 7 32.24	13 3059
197	8.9	35.0	37.2	39.4	41.5	43.7	c	9 39.36	306	54	"	"	III B	41.520	10 9 12.24	14 13 48.91	14 3062
198	9.2	29.0	31.2	33.3	35.5	37.7	c	10 33.34	306	36	10.0	7.1	V	43.355	10 10 6.21	14 28 1.20	14 3066
199	9.3	2.7	4.8	6.6	8.7	10.5	e	10 37.11	306	36	"	"	VII B	38.795	10 10 9.98	14 32 42.50	14 3067
200	8.5	19.2	21.4	23.3	25.2	27.1	e	11 53.54	305	26	10.0	7.6	VII	41.520	10 11 26.36	−15 38 39.95	−15 3018
201	9.0	38.3	40.4	42.5	44.7	46.9	c	14 42.56	306	14	10.0	7.6	III	45.100	10 14 15.43	−14 49 28.87	−14 3086
202	9.2	15.6	17.8	19.9	22.1	24.3	c	16 19.94	306	58	10.0	7.7	III	44.600	10 15 52.85	14 5 36.63	13 3095
203	8.9	13.9	15.9	18.1	20.3	22.5	c	17 18.14	306	22	10.0	7.1	III	44.090	10 16 51.03	14 41 48.58	14 3097
204	9.5	16.0	18.2	20.3	22.5	24.7	c	18 20.34	305	28	10.0	7.1	III A	42.130	10 17 53.19	15 33 14.26	15 3042
205	9.0	34.7	36.9	38.9	41.2	43.3	c	18 39.00	305	28	"	"	V B	41.720	10 18 11.86	−15 39 50.93	−15 3043

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
206	9.1	24.4	26.6	28.7	30.9	32.9	c	19 28.70	306 18 10.0	7.7	V	45.210	10 19 1.59	−14 45 27.69	−14 3109
207	9.3	18.3	20.4	22.4	24.4	26.1	e	19 52.83	306 58 10.0	8.1	VII	40.580	10 19 25.75	14 6 54.72	13 3108
208	9.5	17.8	20.0	24.0	25.7	28.3	c_4 d_3	23 15.58	306 0 10.0	7.8	VI	45.430	10 22 48.48	14 57 24.67	14 3123
209	......	15.0	17.3	19.3	21.3	23.0	e	23 49.46	305 24 10.0	7.3	V C	42.330	10 23 22.34	15 46 52.69	15 3063
210	9.2	32.1	34.3	36.2	38.3	40.1	e	24 6.50	305 24 "	"	VII	47.650	10 23 39.38	−15 38 44.57	−15 3065
211	9.2	56.8	59.1	1.0	3.1	4.9	e	24 31.28	305 24 "	"	VII	49.345	10 24 4.16	−15 38 12.08	−15 3066

Reduction Elements. Zone 100.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 21.3....	−0.098	+0.211	+0.228	−0.081	+0.217	+0.210
21.4....	−0.064	+0.223	+0.192			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	β Canis Majoris		ξ² Canis Majoris		γ Canis Majoris		Piazzi VII. 116		Lalande 19433		λ Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	303 8 8.15		298 10 9.00		305 34 8.90		309 42 8.80		302 32 8.75		309 12 8.80	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.... ..	45.105	5 37.98	43.970	5 16.35		5 2.23	42.800	4 53.96	43.410	5 6.13	44.260	5 22.04
II Red. to Mer......	.085	0.17	.975	0.23		0.14	.785	0.10	.440	0.17	.275	0.11
VI Inclination	.110		.970		43.230	−0.45	.830		.455		.285	
VII Refraction	.135	1 30.1	44.010	1 49.8	.260	1 22.6	.840	1 11.3	.490	1 33.5	.290	1 13.3

	μ Hydrae		44 Hydrae	
	° ′ ″		° ′ ″	
CIRCLE READING.	304 44 8.25		297 50 8.70	
	r	′ ″	r	′ ″
I Microm. Eq.... ..	45.280	5 41.36	45.800	5 51.77
II Red. to Mer......	.260	0.15	.815	0.23
VI Inclination	.325		.840	
VII Refraction	.28c	1 26.2	.860	1 53.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
β Canis Majoris	6 18 45.24	11	+0.22	−40.16	303 12 16.2	35.0
23 H. Camelopardalis.	6 29 3.15	8	−0.30	[−40.20]	40 44	....
ξ² Canis Majoris	6 31 20.05	11	+0.22	−40.13	298 13 35.8	36.4
γ Canis Majoris	6 59 41.31	11	+0.22	−40.07	305 37 48.2	34.9
Piazzi VII. 116	7 23 36.54	11	+0.22	−40.12	309 45 51.6	34.5
Lalande 19433.....	9 50 36.62	11	+0.22	−40.09	302 35 41.5	35.3
λ Hydrae............	10 6 9.81	11	+0.22	−40.11	309 16 17.7	34.2
μ Hydrae............	10 21 42.45	11	+0.22	−40.18	304 48 23.6	35.9
9 H. Draconis........	10 26 58.71	8	−0.15	[−40.07]	37 20	....
44 Hydrae............	10 29 42.91	11	+0.22	−40.15	297 54 7.7	34.5

h			s
6.802	..............*dt*....................		−40.120
	Hourly rate		− 0.0035
			° ′ ″
	Adopted Equator Point		321 6 35.09

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 14	29.829	42.0	40.5
7 24	29.844	39.3	38.4
8 18	29.868	38.1	37.2
9 24	29.878	36.3	35.2
10 30	29.892	34.9	33.5

Notes.

19, 184. Faint companion, n. p.

26, 27. Seeing good; steady; transparent.

150. Fainter close companion preceding.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			303°	304°	305°	306°	307°	308°
	s	h m	s	s	s	s	s	s
303	+0.224	6 30	......	+12.477	+12.595	+12.711	+12.827	+12.942
304	0.224	7 0	+12.268	12.383	12.497	12.611	12.722	12.833
305	0.225	7 30	12.217	12.327	12.435	12.542	12.648	12.754
306	0.224	8 0	12.203	12.306	12.407	12.507	12.606	12.704
307	0.224	8 30	+12.233	+12.326	12.418	12.508	12.598	12.685
308	+0.224	9 0	......	......	12.461	12.542	12.621	12.699
		9 30	......	......	12.542	12.610	12.677	12.742
		10 0	......	......	12.656	12.711	12.764	12.816
		10 30	......	......	+12.800	+12.841	+12.880	+12.919

APPARENT RIGHT ASCENSION.	D = Z. D. N. to 1895.0						R					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
6 30	....	+4.47	+4.20	+3.92	+3.64	+3.36	90.95	87.60	84.39	81.36	78.45	77.04
7 0	+5.56	5.30	5.04	4.78	4.51	4.22	91.16	87.80	84.59	81.55	78.63	77.22
7 30	6.42	6.17	5.91	5.66	5.40	5.14	91.37	88.00	84.78	81.73	78.81	77.39
8 0	7.30	7.07	6.83	6.59	6.35	6.11	91.52	88.15	84.92	81.87	78.94	77.52
8 30	+8.19	+7.98	7.77	7.55	7.33	7.11	91.71	88.33	85.09	82.04	79.10	77.68
9 0	....	....	8.70	8.50	8.31	8.11	91.90	88.51	85.27	82.21	79.27	77.84
9 30	....	....	9.63	9.46	9.31	9.14	92.07	88.67	85.43	82.36	79.41	77.98
10 0	....	....	10.51	10.39	10.26	10.12	92.24	88.84	85.59	82.51	79.56	78.13
10 30	....	....	+11.35	+11.26	+11.17	+11.08	92.39	88.98	85.72	82.64	79.69	78.25

1895 MARCH 22. ZONE 101. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.5	32.6	34.8	36.8	38.7	40.5	e	42 6.87	304 40 10.0 8.1	VII 44.800	6 41 39.34	—16 22 34.05	—16 1595
2	8.0	33.6	35.7	37.9	40.1	42.3	c	43 37.92	303 38 10.0 8.5	III 46.850	6 43 10.27	17 23 57.68	17 1626
3	8.2	42.5	44.6	46.8	49.0	51.1	c	44 46.80	304 56 10.0 8.9	III 46.950	6 44 19.30	16 5 52.17	16 1609
4	8.5	38.6	40.9	43.0	45.2	47.4	c	45 43.02	304 56 " "	III C 48.810	6 45 15.50	16 11 43.59	16 1618
5	8.8	57.1	59.2	1.5	3.7	5.8	c	47 1.46	304 28 10.0 8.1	III 43.190	6 46 33.89	16 35 7.00	16 1629
6	8.7	46.1	48.2	50.2	52.0	54.4	a	48 20.07	304(46)10.0 7.9	I 47.300	6 47 52.54	16 15 47.32	16 1636
7	7.8	39.6	41.8	44.0	46.2	48.3	c	48 43.98	304 58 10.0 8.5	III 42.130	6 48 16.46	16 5 26.37	16 1638
8	8.5	29.6	31.7	33.9	36.0	38.2	c	49 33.88	304 22 10.0 8.6	III B 43.730	6 49 6.29	16 44 11.53	16 1644
9	8.4	28.9	31.0	33.2	35.3	37.5	c	50 33.18	304 22 " "	III A 43.310	6 50 5.59	16 37 51.46	16 1649
10	9.0	28.4	30.7	32.8	34.6	36.4	e	51 2.77	304 42 10.0 8.9	VII B(50).150	6 50 35.21	—16 22 8.05	—16 1653
11	8.8	28.4	30.6	32.7	34.9	37.0	c	52 32.72	304 42 " "	III B 49.315	6 52 5.16	—16 22 24.40	—16 1666
12	8.5	59.8	2.0	4.2	6.4	8.4	c	53 4.16	304 42 " "	III 44.480	6 52 36.60	16 20 43.62	16 1672
13	8.9	27.7	29.9	32.0	34.3	36.4	c	53 32.06	304 42 " "	III B 46.590	6 53 4.49	16 23 17.11	16 1676
14	8.0	0.2	2.3	4.2	6.2	8.1	e	53 34.39	304 42 " "	V 42.370	6 53 6.84	16 21 24.68	16 1678
15	7.8	47.2	49.5	51.3	53.5	55.3	e	54 21.62	305 10 10.0 8.5	VII B(46).845	6 53 54.12	15 55 11.68	15 1581
16	9.0	18.1	20.3	22.5	24.7	26.7	c	55 22.46	305 10 " "	V A 41.135	6 54 54.96	15 50 33 00	15 1580
17	9.2	17.3	19.6	21.6	23.8	25.9	c	56 21.64	304 6 10.0 8.1	V A 43.670	6 55 54.01	16 53 48.08	16 1702
18	9.2	10.6	12.7	14.9	19.0	20.7	c_3 d_2	57 10.51	304 6 " "	V B 47.220	6 56 42.86	16 59 8.88	16 1706
19	8.7	45.4	47.6	49.7	54.0	55.7	c_3 d_2	57 45.41	304 6 " "	V 47.580	6 57 17.77	16 55 48.52	16 1714
20	8.6	46.9	49.0	51.1	55.4	57.0	c_3 d_2	0 46.83	304 56 9.0 7.5	V 40.935	7 0 19.28	—16 7 55.63	—16 1743
21	9.2	19.4	21.6	23.8	25.9	28.0	c	1 23.74	304 56 " "	V B 39.440	7 0 56.18	—16 11 38.22	—16 1751
22	9.3	48.5	50.6	52.7	55.1	57.2	c	1 52.82	304 56 " "	V C 43.320	7 1 25.26	16 13 36.49	16 1756
23	8.9	37.5	39.7	41.6	43.5	45.3	e	2 11.75	304 56 " "	V A 44.640	7 1 44.20	16 3 30.15	16 176
24	9.0	55.3	57.4	59.5	1.7	3.9	c	3 59.56	305 20 10.0 8.0	III 42.890	7 3 32.06	15 43 17.11	15 165
25	8.5	39.7	41.9	43.9	46.2	48.3	c	4 44.00	305 20 " "	III B 42.980	7 4 16.48	15 46 29.46	15 166
26	8.8	24.9	27.1	29.3	31.5	33.7	c	5 29.30	304 16 10.5 8.7	III 45.420	7 5 1.67	16 46 31.64	16 1801
27	8.6	28.0	30.2	32.4	34.5	36.7	c	6 32.36	303 52 10.0 8.0	III A 39.880	7 6 4.68	17 9 5.49	17 1821
28	8.0	20.9	22.9	25.1	27.3	29.6	c	7 25.16	303 52 " "	III 47.330	7 6 57.48	17 9 57.56	17 1828
29	8.6	59.0	1.1	3.3	5.5	7.6	c	9 3.30	304 34 10.0 8.2	III 44.430	7 8 35.69	16 28 51.69	16 183
30	9.1	5.1	7.3	9.4	11.7	13.8	c	10 9.46	304 34 " "	III B 47.290	7 9 41.84	—16 31 11.03	—16 183
31	.....	12.3	14.3	16.2	18.0	20.2	a	11 46.14	304 30 10.0 8.0	I C 49.405	7 11 18.51	—16 37 44.28	—16 185
32	8.6	31.9	33.9	35.8	37.7	40.1	a	12 5.82	304 30 " "	III B 49.740	7 11 38.19	16 34 25.08	16 185
33	8.2	12.9	15.2	17.3	19.5	21.7	c	12 17.32	304 30 " "	III 46.090	7 11 49.70	16 32 21.38	16 186
34	8.9	33.3	35.5	37.7	39.8	42.1	c	12 37.68	304 30 " "	V B 42.990	7 12 10.05	16 36 35.04	16 186
35	9.0	41.0	43.0	44.9	46.8	49.2	a	14 14.91	304 30 " "	I C 46.810	7 13 47.27	16 38 35.06	16 188
36	9.2	22.5	24.6	26.7	29.0	31.0	c	14 26.76	304 30 " "	III C 45.940	7 13 59.12	16 38 51.87	16 188
37	9.2	12.7	14.9	17.0	19.3	21.3	c	15 17.04	304 30 " "	III B 41.035	7 14 49.40	16 37 13.37	16 189
38	8.9	5.7	7.9	9.9	12.4	14.5	c	16 10.08	304 30 " "	III C 43.660	7 15 42.44	16 39 36.28	16 190
39	8.4	56.9	59.1	1.3	3.4	5.7	c	17 1.28	304 30 " "	III B 41.270	7 16 33.64	16 37 9.54	16 191
40	9.3	10.0	12.0	13.9	15.8	18.2	a	18 43.92	304 30 " "	I 42.760	7 18 16.28	—16 33 27.27	—16 192
41	8.0	42.4	44.5	46.7	48.9	51.0	c	18 46.70	304 30 " "	V 47.110	7 18 19.07	—16 32 4.71	—16 192
42	9.0	41.6	43.6	45.4	47.3	49.7	a	21 15.52	304 0 10.0 7.9	I 47.365	7 20 47.83	17 2 1.39	16 195
43	8.9	15.5	17.6	19.4	21.5	23.8	a	21 49.56	304 0 " "	I A 42.620	7 21 21.87	17 0 18.19	16 195
44	9.3	41.7	43.7	45.6	47.5	49.8	a	22 15.68	304 0 " "	I C 46.510	7 21 47.97	17 8 45.47	17 197
45	9.1	39.4	41.7	43.9	46.1	48.1	c	22 43.84	304 0 " "	III B 41.890	7 22 16.14	17 7 1.39	17 197
46	9.4	11.9	13.9	16.2	18.4	20.5	c	24 16.18	305 14 10.0 8.5	III A 41.620	7 23 48.62	15 46 34.73	15 184
47	8.8	16.5	18.7	20.9	23.1	25.2	c	25 20.88	305 14 " "	III B 47.540	7 24 53.32	15 51 10.01	15 185
48	8.1	1.3	3.4	5.3	7.0	9.4	a	26 35.10	305 14 " "	I A 40.560	7 26 7.54	15 46 55.64	15 186
49	8.9	49.9	52.2	54.2	56.5	58.7	c	26 54.30	305 14 " "	III B 39.230	7 26 26.72	15 53 50.10	15 187
50	8.6	57.7	0.0	2.0	4.3	6.4	c	28 2.08	305 14 " "	III B 46.160	7 27 34.50	—15 51 37.52	—15 188

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
51	9.3	39.6	41.7	43.5	45.4	47.8	a	29 13.43	305 14	10.0	8.5	I B	50.360	7 28 45.86	−15 50 16.93	−15 1895
52	7.9	35.6	37.6	39.4	41.4	43.7	a	30 9.39	305 4	9.5	7.0	I	46.040	7 29 41.80	15 58 27.76	15 1904
53	8.8	42.3	44.3	46.0	48.0	50.3	a	31 16.05	304 56	10.0	7.7	I B	42.240	7 30 48.44	16 10 54.79	16 2031
54	8.6	43.0	45.0	47.0	49.0	51.2	a	32 16.90	304 56	"	"	I A	45.055	7 31 49.30	16 3 32.78	15 1926
55	9.4	28.8	30.8	32.7	34.6	36.8	a	33 2.64	304 50	9.0	7.2	I C	45.260	7 32 35.00	16 19 11.92	16 2047
56	9.1	21.0	23.2	25.3	27.5	29.6	c	33 25.32	304 50	"	"	III B	46.870	7 32 57.70	16 15 28.23	16 2050
57	8.2	0.7	2.8	5.0	6.9	8.8	e	33 35.06	304 50	"	"	V	49.200	7 33 7.44	16 11 30.14	16 2052
58	8.9	47.4	49.5	51.7	53.9	56.1	c	34 51.72	304 50	"	"	III	47.300	7 34 24.10	16 12 6.73	16 2063
59	8.8	59.0	1.0	3.3	5.5	7.6	c	36 3.28	304 50	"	"	III C	43.740	7 35 35.64	16 19 42.25	16 2074
60	9.0	43.6	45.3	49.6	51.7	54.0	b_2 c_3	36 53.89	304 50	"	"	III B	43.225	7 36 26.26	−16 16 39.47	−16 2079
61	9.2	0.0	2.1	6.4	8.0	10.6	c_4 d_3	36 57.80	304 50	"	"	VI B	47.510	7 36 30.18	−16 15 17.56	−16 2080
62	9.3	33.0	35.2	37.4	39.5	41.7	c	38 37.36	304 38	10.0	8.3	III	45.940	7 38 9.71	16 24 33.77	16 2092
63	8.8	10.2	12.4	14.7	16.9	19.1	c	39 14.66	304 0	10.0	8.1	V	46.815	7 38 46.94	17 2 19.54	16 2097
64	8.5	58.5	0.6	2.8	5.1	7.3	c	40 2.86	304 22	10.0	8.5	V	42.730	7 39 35.18	16 41 36.94	16 2101
65	8.9	49.5	51.6	53.7	56.0	58.0	c	40 53.76	304 22	"	"	III	48.680	7 40 26.08	16 39 42.70	16 2107
66	8.6	13.8	15.9	18.1	20.3	22.5	c	41 18.12	304 48	10.0	8.4	V C	47.130	7 40 50.48	16 20 37.96	16 2111
67	9.1	3.6	5.9	8.0	12.1	13.8	c_3 d_2	42 3.63	304 48	"	"	V C	49.060	7 41 35.98	16 20 1.22	16 2119
68	9.1	14.4	16.6	18.8	21.0	23.1	c	43 18.78	304 48	"	"	III	49.490	7 42 51.14	16 13 26.82	16 2127
69	8.9	28.3	30.2	32.4	34.7	36.9	c	44 32.50	304 48	"	"	III B	46.380	7 44 4.86	16 17 40.75	16 2136
70	6.8	33.4	35.6	37.8	40.0	42.3	c	45 37.82	304 10	10.0	8.3	III C	48.030	7 45 10.11	−16 58 24.40	−16 2146
71	8.9	50.2	52.3	56.7	58.3	1.0	c_4 d_3	45 48.05	304 10	"	"	VI B	47.460	7 45 20.34	−16 55 22.72	−16 2148
72	8.7	53.3	55.5	57.6	59.9	2.0	c	46 57.66	304 10	"	"	III	45.100	7 46 29.95	16 52 54.44	16 2160
73	9.3	31.0	33.2	35.2	37.6	39.7	c	48 35.34	304 10	"	"	III A	44.000	7 48 7.63	16 50 1.33	16 2169
74	9.2	24.8	26.9	29.0	31.4	33.5	c	49 29.12	304 10	"	"	III B	39.525	7 49 1.40	16 57 56.07	16 2178
75	8.9	21.8	24.0	26.2	28.5	30.6	c	50 26.22	303 40	10.0	8.1	III	45.335	7 49 58.46	17 22 52.73	17 2223
76	9.2	25.3	27.4	29.3	31.1	33.6	a	51 59.23	304 46	9.5	7.7	I	44.000	7 51 31.58	16 17 15.46	16 2199
77	9.0	58.2	0.5	2.5	4.8	6.8	c	52 2.56	304 46	"	"	III B	50.180	7 51 34.92	16 18 31.26	16 2200
78	8.6	29.5	31.7	33.8	36.0	38.3	c	52 33.86	304 46	"	"	III C	50.475	7 52 6.22	16 21 38.74	16 2205
79	8.1	1.0	3.3	5.2	7.0	9.0	e	52 35.30	304 46	"	"	V	48.565	7 52 7.66	16 15 49.00	16 2206
80	9.4	57.3	59.5	1.4	3.4	5.3	e	53 31.62	305 8	10.0	8.3	VII C	45.665	7 53 4.02	−16 1 9.21	−15 2151
81	9.1	15.5	17.6	19.6	21.6	23.4	e	54 49.80	305 8	"	"	VII A	40.830	7 54 22.20	−15 53 1.62	−15 2165
82	9.3	42.4	43.9	48.0	50.3	52.4	b_2 c_3	54 52.44	305 8	"	"	III B	47.910	7 54 24.84	15 57 14.19	15 2166
83	9.1	1.7	3.9	6.0	8.3	10.4	c	56 6.06	305 8	"	"	III	45.870	7 55 38.46	15 54 40.00	15 2180
84	9.3	30.6	32.8	35.0	37.2	39.4	c	56 35.00	304 46	10.0	8.0	V	43.000	7 56 7.36	16 17 36.83	16 2242
85	9.1	22.3	24.5	26.6	28.9	31.0	c	58 26.66	304 26	10.0	7.8	III	44.650	7 57 58.98	16 37 6.53	16 2255
86	9.4	13.3	15.4	17.6	19.8	22.0	c	59 17.62	303 52	10.0	7.8	III	47.135	7 58 49.89	17 10 20.87	17 2299
87	9.3	5.6	7.7	9.9	12.0	14.2	c	0 9.88	304 8	10.0	8.5	III B	43.040	7 59 42.17	16 58 52.43	16 2272
88	9.2	2.0	4.2	6.4	8.5	10.8	c	1 6.38	304 8	"	"	III	41.300	8 0 38.67	16 56 12.34	16 2278
89	8.7	49.3	51.5	53.3	55.0	57.4	a	2 23.29	304 8	"	"	I	46.090	8 1 55.58	16 54 40.29	16 2291
90	9.2	52.3	54.5	56.6	58.8	0.9	c	2 56.62	305 6	10.0	7.9	III B	42.020	8 2 29.00	−16 1 10.38	−15 2262
91	9.4	56.3	58.4	0.6	2.8	4.9	c	4 0.60	305 6	"	"	III	42.850	8 3 33.00	−15 57 41.02	−15 2269
92	9.0	39.0	41.2	43.3	45.5	47.5	c	4 43.30	305 6	"	"	III B	42.900	8 4 15.68	16 0 54.09	15 2273
93	6.8	17.3	19.4	21.5	23.7	25.9	c	5 21.56	305 6	"	"	III	44.020	8 4 53.96	15 57 19.02	15 2280
94	8.9	55.0	57.2	59.4	1.6	3.7	c	5 59.38	305 6	"	"	V B	42.030	8 5 31.76	16 1 11.49	15 2291
95	8.8	30.6	32.9	34.8	36.8	38.6	e	6 4.99	305 6	"	"	VII A	39.635	8 5 37.38	15 55 28.80	15 2292
96	8.7	36.5	38.5	40.8	43.0	45.0	c	7 40.76	304 36	10.0	8.5	III	46.230	8 7 13.10	16 26 38.62	16 2341
97	9.4	2.7	5.0	7.1	9.4	11.5	c	9 7.14	305 16	10.0	8.2	III	48.670	8 8 39.56	15 45 50.45	15 2323
98	8.8	32.3	34.4	36.3	38.2	40.5	a	10 6.15	305 16	"	"	III A	42.600	8 9 38.56	15 44 32.57	15 2333
99	8.6	9.9	11.9	14.2	16.4	18.4	c	10 14.16	305 16	"	"	V C	46.610	8 9 46.56	15 52 56.95	15 2334
100	9.3	15.2	17.5	19.5	21.7	23.8	c	11 19.54	305 16	"	"	III B	45.410	8 10 51.94	−15 50 7.56	−15 2344
101	8.3	58.9	1.0	3.2	5.4	7.6	c	12 3.22	303 30	10.0	8.3	III	45.175	8 11 35.45	−17 33 3.81	−17 2417
102	8.5	20.1	22.2	24.1	25.9	28.4	a	13 54.07	304 34	10.0	8.5	I B	42.825	8 13 26.40	16 32 59.53	16 2387
103	8.6	2.7	4.8	7.0	9.3	11.5	c	14 7.06	304 34	"	"	III	43.740	8 13 39.40	16 29 28.70	16 2389
104	8.8	5.8	8.0	10.1	12.4	14.6	c	15 10.18	304 34	"	"	III B	43.320	8 14 42.51	16 32 50.90	16 2395
105	9.2	19.7	21.7	23.8	26.0	28.3	c	16 23.90	304 6	9.5	7.5	III A	47.375	8 15 56.20	16 53 7.15	16 2403
106	8.5	44.8	46.9	49.0	51.1	53.4	c	16 49.04	304 6	"	"	V C	48.100	8 16 21.33	17 2 34.67	16 2404
107	9.5	12.6	14.9	17.0	19.3	21.3	c	18 17.02	304 6	"	"	III C	48.040	8 17 49.31	17 2 36.48	16 2414
108	8.9	2.8	4.8	7.0	9.2	11.4	c	19 7.04	304 6	"	"	III	46.800	8 18 39.33	16 56 33.78	16 2421
109	9.0	21.3	23.5	25.6	29.9	31.4	c_3 d_2	19 21.27	304 6	"	"	V B	48.865	8 18 53.56	16 59 8.27	16 2423
110	9.3	36.7	39.0	41.1	43.4	45.6	c	20 41.16	304 22	10.5	8.6	III C	48.370	8 20 13.47	−16 46 29.09	−16 2436
111	8.1	16.8	19.0	21.1	23.5	25.5	c	21 21.18	304 22	"	"	III	50.090	8 20 53.50	−16 39 29.51	−16 2440
112	8.5	1.7	3.8	6.0	8.3	10.3	c	22 6.02	305 20	10.0	7.7	III	41.940	8 21 38.44	15 44 4.01	15 2432
113	8.8	34.9	37.2	39.2	41.5	43.6	c	22 39.28	305 20	"	"	III	41.170	8 22 11.70	15 44 18.99	15 2439
114	8.9	5.9	7.9	10.0	12.4	14.6	c	23 10.16	304 50	10.0	8.5	V	46.930	8 22 42.54	16 12 30.04	16 2453
115	8.6	13.0	15.2	17.5	19.7	21.9	c	34 17.46	304 24	10.0	8.0	III	45.030	8 33 49.80	16 39 11.23	16 2534
116	9.0	10.8	12.9	15.0	17.2	19.4	c	35 15.06	304 0	10.0	8.0	III	43.440	8 34 47.35	17 3 43.28	16 2538
117	9.1	12.7	14.8	17.1	19.3	21.5	c	36 17.08	304 0	"	"	III B	45.980	8 35 49.38	17 6 8.65	16 2547
118	9.3	23.6	25.8	28.0	30.1	32.4	c	37 27.98	304 46	10.0	.0	III	44.200	8 37 0.36	16 17 27.05	16 2555
119	8.7	20.7	22.7	24.6	26.5	28.8	a	38 54.64	304 14	10.0	8.0	I	41.610	8 38 26.97	16 50 18.26	16 2562
120	8.9	47.8	49.8	51.9	53.7	55.9	a	39 21.80	304 14	"	"	I B	45.780	8 38 54.12	−16 52 12.26	−16 2564
121	9.0	52.8	55.0	57.3	59.4	1.5	c	39 57.20	304 6	10.0	8.2	III B	44.750	8 39 29.51	−17 0 32.97	−16 2568
122	8.8	21.8	23.8	25.7	27.7	29.9	a	41 55.77	304 6	"	"	I A	39.340	8 41 28.10	−16 55 48.58	16 2579

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.		CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0			δ 1900.0			B. D.	
		s	s	s	s	s		m	s	°	′	″	″		r	h	m	s	°	′	″	°	
123	9.1	17.5	19.7	21.4	23.3	25.6	a	42	51.46	304	22	10.0	8.0	I B	46.825	8	42	23.81	−16	43	52.87	−16	2586
124	7.8	7.9	10.0	12.3	14.5	16.7	c	43	12.28	304	22	"	"	III	45.370	8	42	44.63	16	41	7.55	16	2589
125	9.1	27.9	30.2	32.4	34.6	36.8	c	43	32.38	304	22	"	"	V	46.130	8	43	4.74	16	40	53.41	16	2590
126	9.0	57.5	59.7	1.9	4.2	6.3	c	45	1.92	304	22	"	"	III	43.030	8	44	34.28	16	41	53.01	16	2596
127	8.9	52.8	55.0	57.0	59.3	1.5	c	45	57.12	303	58	10.0	8.3	III	43.200	8	45	29.44	17	5	51.11	16	2601
128	9.1	3.1	5.1	7.0	8.8	11.1	a	47	36.95	304	32	10.0	8.1	I B	41.820	8	47	9.32	16	35	29.80	16	2609
129	8.5	47.0	49.1	51.2	53.5	55.6	c	47	51.28	304	32	"	"	III	43.300	8	47	23.66	16	31	48.10	16	2611
130	8.0	51.3	53.5	55.6	57.7	59.9	c	48	55.60	304	32	"	"	III B	45.250	8	48	27.97	−16	34	24.84	−16	2618
131	8.5	41.9	44.0	46.2	48.4	50.5	c	49	46.20	305	50	10.0	7.7	III	47.575	8	49	18.69	−15	12	23.02	−15	2626
132	9.1	16.6	18.8	21.1	23.3	25.4	c	51	21.04	304	26	10.0	7.8	III B	44.280	8	50	53.41	16	40	44.58	16	2631
133	9.0	3.5	5.5	7.4	9.1	11.5	a	52	37.35	304	26	"	"	I	40.960	8	52	9.73	16	38	34.31	16	2640
134	......	36.0	38.1	40.4	42.6	44.7	c	52	40.36	304	6	9.5	7.5	V C	47.400	8	52	12.70	17	2	59.31	16	2644
135	9.0	38.0	40.1	42.2	44.5	46.8	c	53	42.32	304	6	"	"	V (A)	40.320	8	53	14.67	16	55	34.31	16	2648
136	8.4	21.9	24.1	26.3	28.5	30.6	c	54	26.28	304	6	"	"	V	42.930	8	53	58.63	16	57	59.37	16	2652
137	8.6	22.9	25.0	27.1	29.4	31.5	c	55	27.18	304	22	10.0	8.0	III C	44.830	8	54	59.55	16	47	48.29	16	2658
138	8.9	38.6	40.8	43.0	45.1	47.3	c	56	42.96	304	22	"	"	III	46.860	8	56	15.34	16	40	42.92	16	2663
139	9.3	31.7	33.8	35.6	37.5	39.8	a	58	5.63	304	22	"	"	I	43.670	8	57	38.01	16	41	43.98	16	2667
140	9.2	37.7	39.8	41.6	43.5	45.8	a	59	11.69	303	58	10.0	8.2	I	47.160	8	58	44.04	−17	4	38.91	−16	2670
141	8.0	30.3	32.5	34.7	36.9	39.0	c	59	34.68	303	58	"	"	III	42.940	8	59	7.03	−17	6	0.09	−16	2672
142	9.1	4.5	6.7	8.7	10.6	12.5	e	59	38.66	303	58	"	"	VII B	40.660	8	59	11.01	17	9	57.98	16	2673
143	8.9	34.0	36.2	38.1	40.0	42.3	a	2	7.93	305	20	10.0	7.6	I	45.680	9	1	40.40	15	43	3.85	15	2698
144	9.0	23.9	26.2	28.4	30.7	32.9	c	2	28.42	304	36	10.0	8.2	III	41.770	9	2	0.83	16	28	21.42	16	2684
145	8.9	56.0	58.2	0.3	2.6	4.6	c	3	0.34	305	48	10.0	8.3	V	43.760	9	2	32.85	15	15	40.16	15	2703
146	8.9	10.0	12.2	14.3	16.6	18.7	c	4	14.36	304	40	10.0	8.0	III C	46.450	9	3	46.77	16	29	18.75	16	2690
147	8.6	49.8	51.9	54.0	56.3	58.5	c	4	54.10	304	40	"	"	III A	41.550	9	4	26.54	16	21	11.49	16	2694
148	8.0	53.8	56.0	58.0	0.3	2.4	c	5	58.10	304	40	"	"	III B	42.505	9	5	30.52	16	27	21.97	16	2701
149	8.7	29.5	31.7	33.9	36.0	38.2	c	7	33.86	304	40	"	"	III	42.330	9	7	6.29	16	24	11.98	16	2706
150	8.7	30.3	32.5	34.6	36.9	38.8	c	8	34.62	304	40	"	"	III	45.230	9	8	7.05	−16	23	16.58	−16	2715
151	9.4	19.3	21.4	23.5	25.8	27.9	c	9	23.58	304	40	"	"	III A	43.090	9	8	56.02	−16	20	43.18	−16	2719
152	9.5	17.3	19.5	21.6	23.9	25.9	c	10	21.64	306	10	10.0	8.4	III A	40.340	9	9	54.19	14	51	31.65	14	2788
153	9.4	15.3	17.4	19.6	21.7	23.9	c	11	19.58	306	10	"	"	III B	46.150	9	10	52.13	14	56	8.87	14	2794
154	8.8	24.2	26.4	28.6	30.7	32.9	c	12	28.56	304	38	10.0	8.0	III	45.660	9	12	1.00	16	25	9.47	16	2735
155	9.1	43.0	45.2	47.3	49.5	51.6	c	13	47.32	304	28	10.0	7.9	III	46.930	9	13	19.75	16	34	45.99	16	2740
156	9.0	38.0	40.4	42.5	44.7	46.7	c	14	42.46	304	40	9.7	7.5	III	44.060	9	14	14.91	16	23	41.07	16	2748
157	8.2	10.0	12.2	14.2	16.1	18.0	e	14	44.29	304	40	"	"	V	47.000	9	14	16.74	16	22	45.00	16	2749
158	9.2	20.4	22.7	24.7	27.0	29.1	c	16	24.78	305	14	9.5	7.5	III	46.085	9	15	57.28	15	49	1.04	15	2766
159	8.9	49.0	51.3	53.4	55.6	57.8	c	16	53.42	305	14	"	"	III	46.360	9	16	25.92	15	48	55.88	15	2769
160	9.1	15.8	18.0	20.2	22.4	24.6	c	18	20.20	304	36	10.0	7.9	III	41.225	9	17	52.65	−16	28	36.26	−16	2764
161	9.0	31.2	33.4	35.4	37.8	39.9	c	19	35.54	303	44	9.5	7.5	III	45.190	9	19	7.93	−17	19	23.63	−17	2843
162	8.2	31.0	33.2	35.1	37.5	39.6	c	20	35.28	305	52	10.0	8.3	III	41.420	9	20	7.83	15	12	29.15	15	2787
163	9.5	49.5	51.9	53.9	56.1	58.3	c	22	53.94	304	14	9.5	7.2	III	44.050	9	22	26.38	16	49	44.95	16	2786^1
164	9.1	20.0	22.0	24.0	25.7	28.2	a	22	53.96	304	14	"	"	I	43.610	9	22	26.40	16	49	52.81	16	2786^2
165	8.9	26.0	28.1	30.0	31.8	34.2	a	25	0.00	304	14	"	"	I	45.600	9	24	32.44	16	49	15.14	16	2801
166	8.0	8.3	10.5	12.7	15.0	16.9	c	25	12.68	303	58	10.5	9.0	V A	39.080	9	24	45.11	17	4	5.74	16	2804
167	9.0	52.5	54.7	56.8	59.0	1.1	c	25	56.82	303	58	"	"	V B	40.600	9	25	29.24	17	10	5.38	16	2806
168	9.4	22.4	24.7	26.9	28.9	31.1	c	26	26.80	303	58	"	"	V A	38.880	9	25	59.23	17	4	9.87	16	2809
169	9.5	10.6	13.0	15.0	16.9	18.8	e	26	44.93	303	58	"	"	VII B	50.505	9	26	17.36	17	6	55.51	16	2810
170	9.0	51.3	53.7	55.7	57.7	59.5	e	27	25.73	304	26	10.0	7.7	VII	43.420	9	26	58.20	−16	37	57.52	−16	2812
171	8.8	12.9	14.8	16.7	18.6	20.9	a	29	46.52	305	50	10.0	7.5	I	41.830	9	29	19.09	−15	14	23.50	−15	2833
172	9.1	1.4	2.9	7.0	9.3	11.5	b_2 c_3	30	11.50	303	32	10.0	7.5	III	41.150	9	29	43.91	17	32	44.16	17	2898
173	9.1	40.8	42.9	44.7	46.5	48.9	a	31	14.61	305	2	10.0	8.0	I	44.540	9	30	47.14	16	1	33.89	15	2840
174	9.0	45.3	46.9	51.0	53.3	55.5	b_2 c_3	31	55.46	304	12	10.0	7.8	III A	45.300	9	31	27.94	16	48	7.97	16	2836
175	8.9	6.0	8.2	10.3	12.4	14.6	c	32	10.30	304	12	"	"	V C	50.240	9	31	42.77	16	56	14.55	16	2838
176	9.0	51.3	53.5	55.7	57.9	0.1	c	33	55.70	304	12	"	"	III	42.945	9	33	28.18	16	52	8.35	16	2846
177	8.1	40.9	43.2	45.2	47.5	49.6	c	34	45.28	303	54	10.0	8.1	III	42.260	9	34	17.75	17	10	22.46	16	2848
178	......	41.8	43.9	46.1	48.4	50.5	c	35	46.14	304	20	10.5	8.5	III A	37.380	9	35	18.64	16	42	39.88	16	2851
179	......	15.3	17.7	19.6	21.6	23.5	e	35	49.66	304	20	"	"	VII B	41.260	9	35	22.15	16	47	54.23	16	2852
180	8.9	22.3	24.5	26.6	28.5	30.4	e	36	56.56	304	6	9.5	7.0	VII A	40.290	9	36	29.05	−16	55	46.33	−16	2857
181	9.1	24.2	26.5	28.7	30.8	32.9	c	38	28.62	304	6	"	"	V B	42.240	9	38	1.11	−17	1	37.94	−16	2867
182	8.7	17.6	19.7	21.9	24.2	26.3	c	39	21.94	304	6	"	"	III	41.960	9	38	54.44	16	58	29.49	16	2871
183	9.0	58.9	1.0	2.6	4.6	......	a	40	32.61	305	18	9.5	7.5	III	47.980	9	40	5.20	15	44	30.30	15	2890
184	9.3	33.0	35.3	37.5	39.6	41.7	c	40	37.42	305	18	"	"	V C	47.410	9	40	10.00	15	51	7.83	15	2891
185	9.2	50.3	52.5	54.6	56.5	58.2	e	41	24.43	303	36	10.5	9.0	VII B	51.190	9	40	56.90	17	28	46.98	17	2957
186	8.0	52.8	54.8	57.0	59.3	1.5	c	42	57.08	304	20	10.0	8.4	V	41.580	9	42	29.60	16	44	36.23	16	2887
187	9.2	51.0	53.0	55.3	57.4	59.7	c	43	55.28	303	42	10.0	7.9	V	41.265	9	43	27.77	17	22	44.78	17	2970
188	9.0	44.6	46.8	49.0	51.3	53.4	c	44	49.02	303	56	10.5	8.7	V	46.580	9	44	21.53	17	7	1.57	16	2893
189	8.9	21.5	23.6	25.9	28.0	30.3	c	45	25.86	304	30	10.0	7.9	V	43.640	9	44	58.41	16	33	56.97	16	2895
190	9.4	0.0	2.1	4.5	6.7	8.8	c	46	4.42	304	30	"	"	V	48.310	9	45	36.97	−16	32	27.49	−16	2897

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
191	9.2	5.0	7.0	9.2	11.5	13.6	c	47 9.26	303 54 9.5	7.6	III A	44.000	9 46 41.77	−17 6 37.65	−16 2902
192	9.2	53.3	55.4	57.5	59.7	2.0	c	47 57.58	303 54 "	"	V C	46.690	9 47 30.09	17 15 27.52	17 2985
193	8.9	59.9	2.0	4.3	6.4	8.5	c	49 4.22	305 48 10.4	8.4	III	41.300	9 48 36.86	15 16 37.99	15 2925
194	9.1	13.1	15.4	17.3	19.3	21.0	e	51 47.46	305 4 10.0	7.8	VII	44.070	9 51 20.06	15 59 48.56	15 2932
195	8.5	15.7	17.8	19.9	22.1	24.2	c	53 19.94	305 4 "	"	III B	45.070	9 52 52.56	16 2 42.04	15 2942
196	9.4	46.4	48.4	50.2	52.2	54.3	a	55 20.11	305 18 10.0	7.7	I	43.470	9 54 52.74	15 45 59.07	15 2951
197	8.7	24.8	26.9	29.0	31.3	33.6	c	55 29.12	305 18 "	"	III B	46.030	9 55 1.76	15 48 24.32	15 2952
198	9.0	58.9	1.0	3.2	5.4	7.4	c	56 3.18	305 18 "	"	III B	44.640	9 55 35.82	15 48 51.11	15 2955
199	9.2	3.9	6.0	8.4	10.5	12.6	c	57 8.28	304 14 9.5	7.5	III B	44.030	9 56 40.86	16 53 6.65	16 2942
200	8.4	44.3	46.5	48.5	50.4	52.3	e	57 18.51	304 14 "	"	VII B	50.315	9 56 51.09	−16 51 6.35	−16 2943
201	9.3	44.6	46.7	48.9	51.1	53.5	c	58 48.96	304 22 9.0	7.2	V	51.030	9 58 21.56	−16 39 39.16	−16 2947
202	9.4	33.8	35.9	38.1	40.4	42.6	c	59 38.16	304 22 "	"	V C	46.450	9 59 10.75	16 47 33.48	16 2954
203	8.0	0.3	2.3	3.9	5.9	8.3	a	2 34.13	304 8 10.0	8.2	III	39.310	10 2 6.73	16 57 24.22	16 2969
204	9.0	41.5	43.7	46.0	48.4	50.5	c	2 46.02	304 8 "	"	III B	41.865	10 2 18.62	16 59 49.01	16 2973
205	9.3	15.4	17.5	19.7	21.6	23.3	e	2 49.60	304 8 "	"	V A	39.645	10 2 22.20	16 54 3.25	16 2975
206	9.3	41.8	44.0	46.1	48.0	49.8	e	3 16.03	304 8 "	"	VII B	43.670	10 2 48.63	16 59 14.76	16 2978
207	9.3	28.1	30.1	32.0	33.9	36.2	a	8 2.00	304 30 10.0	7.6	III C	49.950	10 7 34.64	16 38 26.92	16 2993
208	9.3	2.5	4.8	6.9	9.2	11.3	c	8 6.94	304 30 "	"	V	52.110	10 7 39.59	16 31 19.07	16 2994
209	9.2	56.3	58.5	0.6	2.8	5.0	c	9 0.64	303 2 9.5	7.0	V	45.620	10 8 33.21	18 1 29.08	17 3089
210	9.1	45.6	47.9	49.9	51.9	53.8	e	9 19.72	303 2 "	"	VII C	50.030	10 8 52.29	−18 6 30.37	−17 3091
211	8.6	48.4	50.5	52.7	54.9	57.0	c	11 52.70	304 6 9.2	7.1	III	52.250	10 11 25.34	−16 55 18.62	−16 3004
212	8.8	41.6	43.7	45.7	47.6	49.8	a	13 15.68	304 6 "	"	I C	50.800	10 12 48.33	17 2 13.44	16 3013
213	9.3	43.9	45.9	47.7	49.6	51.9	a	14 17.80	304 6 "	"	I C	49.900	10 13 50.45	17 2 30.89	16 3015
214	9.4	23.3	25.3	27.1	29.1	31.3	a	14 57.21	304 6 "	"	I A	42.655	10 14 29.87	16 55 8.26	16 3017
215	8.9	49.0	50.6	54.7	56.9	59.2	b_2 c_3	14 59.14	304 6 "	"	III	42.780	10 14 31.80	16 58 20.90	16 3018
216	8.7	8.7	10.9	13.0	15.2	17.3	c	16 13.02	305 12 10.0	7.5	III	47.340	10 15 45.74	15 50 49.57	15 3030
217	9.0	44.2	46.5	48.6	50.7	52.9	c	16 48.58	304 4 10.5	8.2	V C	47.020	10 16 21.24	17 5 25.34	16 3028
218	9.3	56.3	58.5	0.7	2.9	5.0	c	18 0.68	304 4 "	"	III	45.290	10 17 33.35	16 59 32.13	16 3035
219	9.2	31.5	33.8	35.9	37.7	39.5	e	18 5.76	304 4 "	"	VII (C)	48.450	10 17 38.43	17 4 57.73	16 3036
220	9.0	25.3	27.5	29.5	31.5	33.4	e	18 59.73	305 18 10.0	7.3	VII	50.250	10 18 32.47	−15 43 54.48	−15 3044
221	9.4	8.3	10.6	12.5	14.5	16.3	e	19 42.71	305 18 "	"	V C	51.230	10 19 15.44	−15 50 1.88	−15 3046
222	9.2	0.7	3.0	4.9	6.7	8.5	e	20 34.99	305 0 9.5	7.5	VII	43.460	10 20 7.72	16 4 6.11	15 3051
223	8.6	30.7	32.9	34.9	37.2	39.1	c	21 34.96	305 0 "	"	V B	41.690	10 21 7.70	16 7 53.77	15 3055
224	8.7	17.2	19.4	21.5	25.7	27.3	c_3 d_2	22 17.18	305 12 10.0	7.6	V	44.410	10 21 49.94	15 51 47.08	15 3060
225	8.5	56.4	58.7	0.7	5.1	6.7	c_3 d_2	22 56.45	304 14 9.5	7.2	V B	40.165	10 22 29.16	16 54 25.80	16 3060
226	......	......	48.8	50.8	52.8	54.6	e	23 20.84	304 14 "	"	VI A	42.620	10 22 53.56	16 47 10.10	16 3063
227	9.3	58.6	0.9	3.0	5.2	7.4	c	25 3.02	304 14 "	"	V B	46.360	10 24 35.75	−16 52 27.23	−16 3067

Reduction Elements. Zone 101.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 22.3....	−0.103	+0.208	+0.191	−0.100	+0.192	+0.192
22.4....	−0.097	+0.176	+0.194			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	β Canis Majoris		ξ² Canis Majoris		α Canis Majoris		γ Canis Majoris		Lalande 19433		υ² Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	303 8 9.25		298 10 9.05		304 28 9.15		305 34 9.05		302 32 8.60		308 30 8.90	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.025	5 37.62	43.995	5 17.17	44.610	5 28.83	43.220	5 2.50	43.470	5 6.56		4 11.98
II Red. to Mer......	.050	0.17	44.000	0.23	.620	0.15	.240	0.14	.455	0.17		0.11
VI Inclination	.140		.070		.640		.295		.470		40.650	−0.45
VII Refraction	.145	1 30.9	.030	1 50.8	.660	1 26.6	.280	1 23.3	.490	1 33.8	.600	1 15.4

	λ Hydrae		44 Hydrae	
	° ′ ″		° ′ ″	
CIRCLE READING.	309 12 10.00		297 50 9.05	
	r	′ ″	r	′ ″
I Microm. Eq......	44.260	5 22.00	45.840	5 52.36
II Red. to Mer......	.250	0.11	.820	0.23
VI Inclination	.290		.905	
VII Refraction	.305	1 13.5	.875	1 53.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
β Canis Majoris	6 18 45. 42	11	+0. 17	−40. 31	303 12 16. 1	34. 9
23 H. Camelopardalis	6 29 3. 24	8	−0. 45	[−40. 24]	40 44	....
ξ² Canis Majoris	6 31 20. 11	11	+0. 17	−40. 16	298 13 35. 6	36. 2
α Canis Majoris	6 41 12. 33	11	+0. 17	−40. 29	304 32 11. 5	35. 7
γ Canis Majoris	6 59 41. 47	11	+0. 17	−40. 20	305 37 48. 4	35. 1
Lalande 19433	9 50 36. 78	11	+0. 17	−40. 21	302 35 41. 5	35. 3
υ² Hydrae	10 0 42. 47	11	+0. 17	−40. 20	308 33 5. 1	35. 0
λ Hydrae	10 6 9. 93	11	+0. 17	−40. 18	309 16 18. 6	35. 2
9 H. Draconis	10 26 58. 93	11	−0. 27	[−40. 20]	37 20	....
44 Hydrae	10 29 43. 01	11	+0. 17	−40. 20	297 54 8. 3	35. 2

h 6. 628	*dt*	s −40. 240
	Hourly rate	+ 0. 0121
	Adopted Equator Point	° ′ ″ 321 6 35. 32

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 23	30. 092	41. 1	40. 2
7 19	30. 092	39. 2	38. 5
8 25	30. 115	37. 9	37. 5
9 21	30. 125	37. 2	37. 2
10 32	30. 137	36. 8	36. 5

Notes.

23 H. Camelopardalis. Images very steady, air very transparent.

37, 134. Very close double, equal components.

61. Very close double, mean observed.

149. Suspected double.

178. Faint companion preceding.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0					*D* = Z. D. N. to 1895.0				
			303°	304°	305°	306°	307°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	″	″	″	″	″
303	+0. 174	6 30	+12. 377	+12. 496	+12. 615	+12. 732	......	+ 4. 71	+ 4. 44	+ 4. 17	+ 3. 90	....
304	0. 173	7 0	12. 286	12. 403	12. 517	12. 630	......	5. 56	5. 30	5. 03	4. 76	....
305	0. 175	7 30	12. 235	12. 345	12. 453	12. 561	......	6. 42	6. 18	5. 92	5. 66	....
306	0. 174	8 0	12. 222	12. 325	12. 425	12. 524	......	7. 33	7. 09	6. 86	6. 61	....
307	+0. 174	8 30	12. 248	12. 341	12. 433	12. 523	......	8. 24	8. 03	7. 81	7. 59	....
		9 0	12. 313	12. 395	12. 477	12. 556	+12. 634	9. 14	8. 95	8. 76	8. 58	+8. 38
		9 30	12. 415	12. 485	12. 553	12. 621	+12. 688	10. 01	9. 85	9. 69	9. 52	+9. 35
		10 0	12. 553	12. 610	12. 665	12. 719	......	10. 86	10. 72	10. 60	10. 47	....
		10 30	+12. 726	+12. 767	+12. 808	+12. 847	......	+11. 63	+11. 55	+11. 46	+11. 36	....

APPARENT RIGHT ASCENSION.	*R*				
	303°	304°	305°	306°	306° 30′
h m	″	″	″	″	″
6 30	91. 77	88. 39	85. 15	82. 09	80. 61
7 0	91. 96	88. 57	85. 33	82. 26	80. 78
7 30	92. 11	88. 72	85. 47	82. 40	80. 91
8 0	92. 21	88. 82	85. 57	82. 49	81. 00
8 30	92. 32	88. 92	85. 66	82. 58	81. 10
9 0	92. 36	88. 96	85. 70	82. 62	81. 13
9 30	92. 43	89. 02	85. 76	82. 68	81. 19
10 0	92. 51	89. 10	85. 84	82. 76	81. 26
10 30	92. 60	89. 19	85. 92	82. 83	81. 34

1895 MARCH 27. ZONE 102. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	....	4. 1	6. 4	8. 2	10. 2	12. 4	a	17 38. 42	303	10	10. 0	9. 0	I C	48. 030	7 17 9. 54	−17 58 13. 61	−17 1929
2	..	58. 2	0. 3	2. 6	5. 0	7. 0	c	18 2. 62	303	10	"	"	V	49. 000	7 17 33. 75	17 51 28. 78	17 1933
3	8. 6	22. 8	25. 1	27. 3	29. 4	31. 7	c	19 27. 26	302	54	10. 0	8. 6	V	42. 560	7 18 58. 36	18 9 33. 92	18 1815
4	8. 4	28. 1	30. 2	32. 0	33. 9	36. 4	a	22 2. 28	303	10	10. 0	9. 0	I B	43. 880	7 21 33. 40	17 56 21. 56	17 1970
5	8. 2	5. 3	7. 5	9. 6	11. 8	14. 0	c	22 9. 64	303	10	"	"	III B	47. 045	7 21 40. 76	17 55 21. 31	17 1971
6	8. 9	49. 7	51. 9	54. 0	56. 1	58. 3	c	22 54. 00	305	10	10. 0	9. 5	III C	51. 250	7 22 25. 33	15 57 7. 90	15 1826
7	8. 8	43. 6	45. 9	48. 0	50. 2	52. 3	c	23 48. 00	305	10	"	"	III	42. 645	7 23 19. 33	15 53 26. 64	15 1837
8	9. 0	36. 0	37. 9	39. 7	41. 6	44. 0	a	25 9. 68	305	10	"	"	I B	42. 740	7 24 41. 00	15 56 38. 64	15 1851
9	8. 8	33. 5	35. 6	37. 8	40. 2	42. 2	c	25 37. 86	302	48	10. 0	9. 5	III	42. 860	7 25 8. 93	18 15 30. 03	18 1863
10	8. 6	16. 8	19. 0	21. 0	23. 3	25. 5	c	26 21. 12	302	48	"	"	III A	39. 250	7 25 52. 19	−18 13 24. 88	−18 1867
11	8. 1	21. 7	23. 9	26. 1	28. 3	30. 4	c	28 26. 08	303	0	10. 0	8. 7	III	46. 730	7 27 57. 17	−18 2 16. 61	−17 2023
12	9. 1	44. 8	47. 0	49. 2	51. 4	53. 6	c	28 49. 20	303	0	"	"	V	46. 475	7 28 20. 28	18 2 22. 00	17 2025
13	9. 1	37. 6	39. 8	41. 8	44. 1	46. 4	c	29 41. 94	303	16	10. 0	9. 5	V B	50. 130	7 29 13. 05	−17 48 24. 69	−17 2033

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
14	8.8	55.4	57.7	59.9	2.0	4.3	c	30 59.86	303 46	10.0	9.2	III	44.755	7 30 31.02	—17 16 52.94	—17 2043
15	8.5	12.7	14.8	17.0	21.4	22.9	c_3 d_2	31 12.68	303 46	"	"	V B	45.210	7 30 43.84	17 19 58.34	17 2048
16	8.6	1.9	4.1	6.3	8.4	10.5	c	32 6.24	304 22	10.0	9.4	V	46.450	7 31 37.47	16 40 19.36	16 2037
17	8.7	21.0	23.3	25.4	27.6	29.8	c	33 25.42	302 48	10.0	9.5	III	46.200	7 32 56.48	18 14 28.87	18 1932
18	9.2	40.4	42.6	44.8	46.9	49.0	c	34 44.74	304 58	10.0	9.6	III B	41.030	7 34 16.02	16 9 16.00	16 2062
19	8.5	10.8	13.1	15.3	17.5	19.7	c	35 15.28	304 58	"	"	III	43.255	7 34 46.57	16 5 19.70	15 1961
20	8.7	59.7	2.0	4.1	6.4	8.5	c	36 4.14	303 50	10.0	8.7	III	40.830	7 35 35.30	—17 14 10.20	—17 2089
21	9.0	6.2	8.4	10.5	12.8	14.8	c	37 10.54	303 6	10.0	8.6	III A	44.760	7 36 41.63	—17 53 42.71	—17 2098
22	8.7	4.7	6.7	9.0	11.1	13.4	c	38 8.98	303 6	"	"	III B	50.290	7 37 40.06	17 58 25.46	17 2106
23	......	47.9	50.2	52.2	54.1	55.8	e	38 21.96	303 6	"	"	V C	50.430	7 37 53.03	18 1 35.65	17 2108
24	8.8	41.3	43.5	45.7	47.9	50.1	c	39 45.70	303 22	10.0	9.1	V B	50.180	7 39 16.81	17 42 27.37	17 2120
25	8.6	11.4	13.6	15.9	18.0	20.2	c	40 15.82	303 22	"	"	V A	45.610	7 39 46.94	17 37 26.64	17 2126
26	9.1	13.8	16.0	18.2	20.6	22.8	c	41 18.28	303 22	"	"	III C	44.240	7 40 49.38	17 47 34.66	17 2137
27	8.5	11.4	13.5	15.5	17.4	19.4	e	41 45.33	302 52	10.0	9.0	V	42.365	7 41 16.38	18 11 45.98	18 2006
28	9.0	26.4	28.6	33.0	34.7	37.3	c_4 d_3	42 24.30	302 52	"	"	VI B	40.865	7 41 55.35	18 15 28.74	18 2013
29	9.0	13.1	15.2	17.3	19.3	21.1	e	42 47.37	304 32	10.4	9.5	VII	43.280	7 42 18.60	16 31 23.60	16 2124
30	9.1	29.7	31.9	34.1	36.3	38.4	c	44 34.08	305 2	10.0	8.7	V	44.270	7 44 5.36	—16 1 4.30	—15 2062
31	8.6	2.7	4.9	6.9	9.3	11.4	c	45 7.04	305 2	"	"	V B	40.960	7 44 38.31	—16 5 21.69	—15 2068
32	9.2	22.9	25.2	27.3	29.5	31.6	c	46 27.30	305 16	10.0	8.9	III	42.765	7 45 58.60	15 47 32.76	15 2082
33	8.0	2.5	4.7	7.0	9.3	11.4	c	47 6.98	303 2	11.0	9.7	III A	39.000	7 46 38.04	17 59 36.07	17 2185
34	8.7	41.8	44.0	46.1	48.5	50.5	c	47 46.18	303 2	"	"	V B	38.945	7 47 17.23	18 6 6.12	17 2188
35	9.0	14.2	16.3	18.5	20.5	22.3	e	47 48.28	203 2	"	"	VII	41.580	7 47 19.34	18 2 2.03	17 2189
36	9.4	35.3	37.5	39.6	41.8	44.0	c	49 39.64	305 10	10.0	8.9	III	42.360	7 49 10.92	15 53 41.96	15 2114
37	8.0	3.3	5.3	7.5	9.7	11.9	c	50 7.54	303 2	10.0	8.0	V B	45.010	7 49 38.59	18 4 11.91	17 2219
38	8.9	34.4	36.6	38.6	40.9	43.2	c	50 38.74	303 2	"	"	V	49.700	7 50 9.80	17 59 28.38	17 2225
39	9.2	10.1	12.3	14.4	16.7	18.7	c	52 14.44	303 42	10.0	8.5	III	51.070	7 51 45.57	17 19 0.07	17 2237
40	......	27.0	29.2	31.2	35.6	37.2	c_3 d_2	52 26.96	303 42	"	"	V C	55.000	7 51 58.08	—17 24 11.32	—17 2239
41	5.8	47.8	50.0	52.0	54.3	56.5	c	55 52.12	302 56	9.5	8.0	III	43.525	7 55 23.16	—18 7 28.97	—18 2118
42	9.3	28.1	30.3	32.5	34.6	36.8	c	56 32.46	303 44	10.0	8.8	V B	46.980	7 56 3.58	17 21 33.90	17 2277
43	9.3	54.5	56.8	58.9	1.1	3.2	c	57 58.90	303 44	"	"	III	44.280	7 57 30.03	17 19 12.18	17 2292
44	9.3	34.4	36.6	38.8	40.9	43.0	c	58 38.74	303 44	"	"	III B	39.765	7 58 9.86	17 23 52.86	17 2295
45	9.4	43.5	45.6	47.8	50.0	52.1	c	59 47.80	303 44	"	"	III A	41.160	7 59 18.93	17 16 58.00	17 2304
46	8.0	26.0	28.1	30.4	32.5	34.6	c	0 30.32	303 44	"	"	III B	42.800	8 0 1.44	17 22 55.28	17 2311
47	9.0	12.6	14.7	16.9	19.2	21.5	c	1 16.98	303 18	10.0	9.0	III A	44.190	8 0 48.07	17 42 1.56	17 2321
48	9.4	40.5	42.5	44.9	49.0	50.8	c_3 d_2	1 40.45	303 18	"	"	VI C	49.550	8 1 11.52	17 49 59.94	17 2324
49	9.0	12.1	14.4	16.6	18.7	20.9	c	3 16.54	303 18	"	"	III	48.050	8 2 47.62	17 44 2.87	17 2337
50	9.3	34.1	36.4	38.5	40.8	42.9	c	4 38.54	303 0	10.0	8.8	III B	45.070	8 4 9.59	—18 6 15.32	—17 2352
51	9.4	35.8	37.9	40.1	42.2	44.4	c	5 40.08	303 0	"	"	III (B)	49.160	8 5 11.13	—18 4 57.17	—17 2362
52	9.0	55.3	57.3	59.7	3.7	5.5	c_3 d_2	5 55.20	303 0	"	"	V	50.830	8 5 26.25	18 1 11.77	17 2367
53	8.4	51.2	52.8	57.0	59.1	1.3	b_2 c_3	7 1.37	303 0	"	"	III	44.050	8 6 32.42	18 3 21.92	17 2378
54	9.2	47.5	49.3	53.4	55.6	57.6	b_2 c_3	7 57.70	305 40	10.7	9.9	III A	39.630	8 7 29.02	15 21 23.84	15 2309
55	9.0	24.5	26.9	28.9	30.7	32.5	e	7 59.04	305 40	"	"	V A	39.020	8 7 30.36	15 21 35.68	15 2310
56	6.	8.5	10.7	12.9	15.0	17.1	c	9 12.84	305 40	"	"	III C	45.520	8 8 44.14	15 29 12.74	15 2324
57	9.6	17.5	19.8	21.8	23.9	26.0	c	10 21.80	305 40	"	"	III B	38.200	8 9 53.10	15 28 20.72	15 2337
58	9.0	52.4	54.6	56.7	59.0	1.2	c	10 56.78	303 56	9.6	8.5	V C	45.040	8 10 27.91	17 13 28.36	17 2408
59	9.6	52.8	55.1	57.2	59.4	1.5	c	11 57.20	303 56	"	"	III A	46.200	8 11 28.34	17 3 25.18	16 2373
60	9.2	6.3	8.7	10.9	13.1	15.2	c	13 10.84	303 56	"	"	III A	42.410	8 12 41.98	17 4 38.30	—16 2381
61	9.5	58.3	0.5	2.7	4.8	7.1	c	14 2.68	305 16	10.0	8.7	III	46.240	8 13 33.94	—15 46 35.73	15 2369
62	......	58.4	0.6	2.6	4.9	7.0	c	15 2.70	303 6	9.6	8.2	V A	39.605	8 14 33.76	17 55 35.53	17 2439
63	9.0	36.4	38.6	40.7	42.9	45.0	c	15 40.72	303 6	"	"	V	45.260	8 15 11.77	17 57 2.11	17 2442
64	8.6	4.4	6.7	8.6	10.8	13.0	c	17 8.70	304 22	10.0	8.5	III	44.690	8 16 39.88	16 41 9.08	16 2405
65	9.2	27.6	29.8	31.9	34.0	36.2	c	18 31.90	304 48	10.0	9.2	III	47.050	8 18 3.12	16 14 22.69	16 2416
66	8.9	19.1	21.4	23.4	25.7	27.8	c	19 23.48	304 48	"	"	III B	42.720	8 18 54.69	16 18 59.85	16 2424
67	9.0	44.2	46.2	48.2	50.4	52.7	c	19 48.34	304 16	10.0	8.6	V	47.870	[8 19 19.51]	16 46 9.51	16 2427
68	9.5	37.5	39.8	42.0	44.1	46.1	c	20 41.90	304 16	"	"	III B	43.360	8 20 13.06	16 50 49.80	16 2435
69	8.6	7.1	9.3	11.4	13.3	15.0	e	20 41.47	305 6	10.0	8.8	VII	44.390	8 20 12.72	[15 57 14.30]	15 2421
70	9.1	52.2	54.4	56.6	58.9	0.9	c	22 56.60	303 14	10.0	8.8	III	42.535	8 22 27.67	—17 49 55.51	—17 2500
71	9.0	3.2	5.5	7.5	9.8	11.9	c	24 7.58	303 50	10.0	8.8	III	44.980	8 23 38.71	—17 13 7.18	—17 2509
72	8.7	28.6	30.3	34.6	36.7	38.7	b_2 c_3	24 38.85	303 50	"	"	III	49.900	8 24 9.98	17 11 32.91	17 2512[1]
73	9.0	4.8	7.2	9.2	11.0	12.9	e	24 39.08	303 50	"	"	V	49.050	8 24 10.21	17 11 49.60	17 2512[2]
74	9.1	7.5	9.9	11.7	13.5	15.7	a	26 41.78	303 20	9.2	7.2	I	44.830	8 26 12.87	17 43 12.99	17 2527
75	9.2	40.9	43.3	45.4	47.4	49.8	c	26 45.36	303 20	"	"	III B	45.700	8 26 16.44	17 46 10.67	17 2528
76	8.0	51.6	53.7	56.0	58.2	0.5	c	27 56.00	303 0	10.0	8.3	III	45.875	8 27 27.05	18 2 53.97	17 2534
77	9.1	29.5	31.8	33.9	36.0	38.2	c	28 33.88	303 42	10.0	8.8	III A	47.400	8 28 5.01	17 17 7.83	17 2541
78	9.6	25.5	27.7	29.8	32.0	34.2	c	29 29.84	303 42	"	"	III C	49.570	8 29 0.95	17 26 7.93	17 2549
79	......	47.9	50.3	52.3	56.6	58.1	c_3 d_2	29 47.96	303 42	"	"	V B	(46).680	8 29 19.08	17 23 50.77	17 2552
80	9.2	18.9	21.0	25.2	26.9	29.5	c_4 d_3	30 16.63	303 42	"	"	VI (B)	49.820	8 29 47.75	—17 22 50.70	—17 2561
81	8.6	50.0	52.1	54.0	55.7	58.1	a	32 23.99	304 0	10.0	8.7	I	45.140	8 31 55.14	—17 3 5.70	—16 2519
82	8.8	36.5	38.6	40.4	42.4	44.6	a	33 10.52	304 0	"	"	I C	47.310	8 32 41.66	17 8 51.58	16 2525
83	9.3	17.6	19.8	21.9	24.3	26.2	c	33 21.96	304 8	9.2	8.2	III A	43.940	8 32 53.13	16 52 15.14	16 2527
84	9.0	1.5	3.6	5.8	8.1	10.1	c	34 5.82	304 8	"	"	V	42.080	8 33 36.99	16 56 6.14	16 2532
85	9.2	50.7	53.0	55.1	57.3	59.5	c	34 55.12	304 8	"	"	V	39.260	8 34 26.27	16 57 0.50	16 2537
86	8.0	33.7	36.5	38.2	42.4	44.4	b_1 c_2	35 46.69	304 8	"	"	IV	50.270	8 35 17.85	—16 56 43.04	—16 2541

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
87	9.5	19.9	22.1	24.3	26.1	28.0	e	35 54.18	304 8 9.2 8.2	VII 48.440	8 35 25.34	−16 54 4.77	−16 2542
88	8.9	47.3	49.5	51.7	56.0	57.6	c_3 d_2	36 47.35	304 8 " "	V B 42.975	8 36 18.50	16 59 3.44	16 2550
89	9.5	9.4	11.3	13.3	15.1	17.5	a	38 43.18	304 56 10.5 9.1	I A 47.420	8 38 14.42	16 3 6.30	15 2561
90	9.4	57.5	59.6	1.4	3.2	5.5	a	39 31.32	304 56 " "	I C 47.880	8 39 2.54	−16 12 39.43	−16 2565
91	9.2	27.7	30.0	32.2	34.4	36.3	c	39 32.12	303 44 10.0 8.1	V 49.705	8 39 3.25	−17 17 42.26	−17 2626
92	9.7	3.3	5.6	7.8	12.1	13.6	c_3 d_2	40 3.40	303 44 " "	VI 44.050	8 39 34.53	17 19 31.07	17 2631
93	9.4	30.1	32.3	34.6	36.7	38.8	c	41 34.50	303 32 10.4 8.7	III (A) 45.960	8 41 5.62	17 27 39.79	17 2641
94	9.6	34.6	36.8	39.1	40.9	43.0	c	42 38.88	303 32 " "	III B 43.715	8 42 9.99	17 34 51.69	17 2647
95	9.5	......	41.6	43.4	45.3	47.4	a	44 13.32	304 46 10.0 8.2	III 41.100	8 43 44.54	16 18 25.51	16 2593
96	9.4	40.2	42.2	44.1	46.2	48.3	a	45 14.18	304 14 10.0 8.1	III 44.710	8 44 45.36	16 49 17.99	16 2597[1]
97	9.4	10.1	12.3	14.5	16.7	18.8	c	45 14.48	304 14 " "	V 45.130	8 44 45.66	16 49 10.29	16 2597[2]
98	8.9	51.7	53.9	56.0	0.3	2.0	c_3 d_2	45 51.71	304 14 " "	V B 46.340	8 45 22.89	16 52 1.04	16 2600
99	9.2	4.9	6.9	9.0	11.5	13.5	c	20 9.16	303 2 10.0 8.6	III 45.110	9 19 40.31	18 1 23.13	17 2846
100	9.6	27.1	29.5	31.5	33.6	35.8	c	21 31.50	303 48 10.0 8.7	V 45.765	9 21 2.70	−17 15 8.88	−17 2854
101	9.1	28.6	30.6	32.8	35.0	37.1	c	22 32.82	302 54 10.0 10.0	III 42.570	9 22 3.96	−18 10 12.19	−17 2857
102	9.2	33.1	35.4	37.5	39.6	41.7	c	23 37.46	303 28 10.0 8.6	III 43.680	9 23 8.64	17 35 50.10	17 2862
103	9.5	40.0	42.0	44.3	46.7	48.9	c	24 44.38	303 28 " "	III A 38.330	9 24 15.57	17 34 18.35	17 2869
104	9.3	27.5	29.6	31.7	34.3	36.3	c	25 31.88	302 54 10.0 8.8	III 45.620	9 25 3.03	18 9 14.98	17 2875
105	9.5	50.0	52.1	54.4	58.5	0.4	c_3 d_2	25 49.98	302 54 " "	V B 44.480	9 25 21.13	18 12 50.99	18 2694
106	9.6	47.5	49.7	51.4	53.5	55.4	e	26 21.93	306 20 10.0 8.4	VII 45.370	9 25 53.32	14 43 10.87	14 2870
107	9.7	31.4	33.9	35.9	38.2	40.2	c	27 35.92	303 18 10.0 9.0	V 43.680	9 27 7.10	17 45 51.72	17 2886
108	8.8	8.9	11.0	13.1	15.3	17.5	c	30 13.16	302 46 10.0 8.5	III 41.980	9 29 44.32	18 18 26.53	18 2722
109	9.4	......	17.8	19.7	21.8	23.5	e	30 49.98	305 30 10.0 8.5	VII 43.950	9 30 21.32	15 33 41.35	15 2838
110	9.3	45.9	48.4	50.3	52.2	54.0	e	31 20.46	305 30 " "	VII B 41.035	9 30 51.80	−15 37 50.95	−15 2841
111	9.0	48.2	50.1	52.0	53.9	56.3	a	33 22.04	304 26 10.0 9.5	III 45.250	9 32 53.32	−16 37 18.98	−16 2843
112	8.7	11.2	13.4	15.3	17.1	19.3	a	34 45.39	303 24 10.0 9.6	I B 41.130	9 34 16.60	17 43 54.71	17 2921
113	8.8	57.2	59.3	1.3	3.0	5.6	a	35 31.38	303 24 " "	I A 42.760	9 35 2.60	17 36 55.22	17 2924
114	9.4	49.7	51.8	53.7	55.6	57.9	a	36 23.92	303 0 10.0 8.8	I 44.420	9 35 55.12	18 3 39.67	17 2929
115	8.9	20.6	22.6	24.9	......	29.3	c	36 24.90	303 0 " "	V A 39.930	9 35 56.10	18 1 51.83	17 2930
116	8.8	13.0	15.1	17.4	19.8	21.8	c	37 17.42	303 0 " "	III A 40.140	9 36 48.62	18 1 47.85	17 2933
117	9.4	6.5	8.7	11.0	13.1	15.1	c	38 10.88	302 50 10.0 8.3	V B 36.(370)	9 37 42.07	18 19 29.96	18 2760
118	8.0	2.7	4.8	6.7	8.5	10.9	a	40 36.76	303 50 10.0 8.7	III 40.720	9 40 8.02	17 14 49.66	17 2952
119	8.9	30.2	32.3	34.4	36.7	38.8	c	41 34.48	302 50 10.0 8.7	III 42.300	9 41 5.68	18 14 22.61	18 2772
120	9.3	12.7	14.8	16.5	18.4	21.0	a	42 46.58	304 40 10.0 8.6	III A 41.095	9 42 17.91	−16 21 25.83	−16 2885
121	9.5	9.3	11.5	13.7	15.9	17.9	c	43 13.66	304 40 " "	III 42.110	9 42 44.98	−16 24 21.15	−16 2889
122	9.2	14.6	16.7	18.7	21.1	23.2	c	45 18.86	304 54 10.3 9.5	III 41.085	9 44 50.20	16 10 39.98	15 2910
123	8.9	50.0	52.1	54.3	56.6	58.5	c	46 54.30	302 52 10.0 9.0	III 45.130	9 46 25.52	18 11 29.15	17 2980
124	9.5	37.4	39.6	41.7	46.0	47.8	c_3 d_2	48 37.41	303 16 10.0 9.0	V 43.465	9 48 8.66	17 48 0.60	17 2993
125	8.9	49.0	51.0	53.3	55.4	57.5	c	49 53.24	303 16 " "	III 44.650	9 49 24.50	17 47 37.74	17 2997
126	9.6	50.9	53.0	55.2	57.2	59.5	c	52 55.16	304 48 10.5 9.5	VI 41.710	9 52 26.52	−16 16 30.15	−16 2926

Reduction Elements. Zone 102.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 27.3....	+0.076	+0.078	+0.013	+0.060	+0.112	+0.013
27.4....	+0.044	+0.145				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	θ Canis Majoris		Piazzi VI. 303		γ Canis Majoris		29 Canis Majoris		Piazzi IX. 13		θ Pyxidis Nautilis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	309 8 10.50		295 46 10.15		305 34 9.90		296 40 9.85		301 44 9.30		295 32 9.10	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.410	5 6.23	46.170	5 58.58	43.050	4 59.21	46.750	6 9.73	42.185	4 41.98	43.430	5 6.67
II Red. to Mer......	.440	0.11	.135	0.25	.085	0.14	.770	0.24	170	0.18	.490	0.29
VI Inclination......	.490		.220		.120		.775		.190			0.12
VII Refraction......	.475	1 9.8	.210	1 57.2	.095	1 19.5	.765	1 52.9	.210	1 32.0	.510	1 58.7

	υ² Hydrae		λ Hydrae	
	° ′ ″		° ′ ″	
CIRCLE READING.	308 28 9.60		309 12 10.20	
	r	′ ″	r	′ ″
I Microm. Eq......	46.605	6 7.88	44.090	5 18.79
II Red. to Mer......	.720	0.11	.050	0.11
VI Inclination......	.670		.140	
VII Refraction......	.680	1 11.4	.155	1 9.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
θ Canis Majoris	6 50 0.85	11	+0.14	—41.45	309 12 7.0	36.8
51 H. Cephei	6 52 8.55	4	+2.57	[—41.39]	48 16	....
Piazzi VI. 303	6 54 59.77	11	+0.13	—41.40	295 50 11.8	37.4
γ Canis Majoris	6 59 42.61	11	+0.14	—41.40	305 37 49.7	36.5
29 Canis Majoris	7 15 0.12	11	+0.13	—41.33	296 44 26.9	36.7
Piazzi IX. 13	9 7 52.94	11	+0.14	—41.48	301 47 19.5	36.3
θ Pyxidis Nautilis	9 17 33.39	11	+0.13	—41.41	295 35 17.5	36.3
υ² Hydrae	10 0 43.75	11	+0.14	—41.49	308 33 6.2	36.6
λ Hydrae	10 6 11.21	11	+0.14	—41.47	309 16 19.5	36.6

h 7.000	*dt*	s —41.395
	Hourly rate	— 0.0255
	Adopted Equator Point	° ′ ″ 321 6 36.65

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 8	29.512	53.6	52.0
7 54	29.486	51.6	50.0
9 10	29.430	51.8	50.2
10 9	29.400	52.4	51.2

Notes.

51 H. Cephei. Image steady.

95. Mean observed.

117. Telescope micrometer record uncertain whether .370 or .870.

Hazy during zone.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
303	+0.138
304	0.139
305	0.140
306	0.141
307	+0.142

APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					
	302°	303°	304°	305°	306°	307°
h m	s	s	s	s	s	s
7 0	+12.285	+12.401	+12.516	+12.631	+12.742	......
7 30	12.236	12.346	12.455	12.564	12.669	......
8 0	12.225	12.326	12.429	12.527	12.626	......
8 30	12.252	12.344	12.437	12.528	12.618	......
9 0	12.318	12.399	12.481	12.562	12.641	+12.720
9 30	12.422	12.491	12.559	12.627	12.695	+12.761
10 0	+12.560	+12.616	+12.671	+12.727	+12.779	......

APPARENT RIGHT ASCENSION.	$D=$ Z. D. N. to 1895.0						R				
	302°	303°	304°	305°	306°	307°	302° 30′	303° 30′	304° 30′	305° 30′	306° 30′
h m	″	″	″	″	″	″	″	″	″	″	″
7 0	+ 5.89	+ 5.63	+ 5.36	+ 5.09	+ 4.81	....	89.43	86.10	82.95	79.93	77.07
7 30	6.83	6.57	6.31	6.05	5.78	....	89.62	86.28	83.12	80.09	77.23
8 0	7.79	7.55	7.30	7.05	6.80	....	89.74	86.40	83.23	80.20	77.34
8 30	8.76	8.53	8.30	8.07	7.83	....	89.66	86.32	83.16	80.13	77.27
9 0	9.68	9.47	9.27	9.06	8.85	+8.63	89.58	86.24	83.08	80.06	77.20
9 30	10.58	10.41	10.22	10.04	9.86	+9.67	89.47	86.14	82.98	79.96	77.11
10 0	+11.44	+11.30	+11.15	+10.99	+10.85	....	89.33	86.00	82.85	79.84	76.98

1895 MARCH 28. ZONE 103. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	......	45.0	47.3	49.4	51.3	53.0	e	16 19.63	306	22	10.0	8.3	VII	43.870	7 15 50.62	—14 40 58.67	—14 1840
2	......	32.0	34.2	36.2	40.3	42.1	c_3 d_2	16 31.95	306	22	"	"	VII	43.460	7 16 2.94	14 41 6.61	14 1843
3	8.6	8.6	10.6	12.5	14.5	16.8	a	18 42.68	303	36	10.0	8.3	I	46.920	7 18 13.36	17 26 7.73	17 1941
4	8.7	53.6	55.5	57.5	59.4	1.7	a	19 27.74	302	54	10.0	8.0	I	42.550	7 18 58.34	18 9 34.17	18 1815
5	8.0	51.1	53.2	55.3	57.6	59.6	c	19 55.36	303	50	10.0	7.9	III	43.910	7 19 26.06	17 13 6.02	17 1955
6	8.9	33.2	35.5	37.7	39.9	42.1	c	20 37.68	303	10	10.0	7.8	III	44.180	7 20 8.30	17 53 3.18	17 1960
7	8.9	13.3	15.5	17.8	20.0	22.2	c	21 17.76	304	48	10.0	8.0	III	41.895	7 20 48.56	16 15 42.34	16 1949
8	9.0	25.5	27.6	29.7	31.9	34.1	c	22 29.76	304	48	"	"	III B	48.515	7 22 0.56	16 16 49.55	16 1958
9	9.1	50.4	52.6	54.6	56.8	58.9	c	23 54.66	304	48	"	"	III A	47.000	7 23 25.46	16 10 50.67	16 1963
10	9.1	32.6	34.8	36.7	38.9	41.2	c	24 36.84	304	48	"	"	III C	44.860	7 24 7.62	—16 21 13.47	—16 1969
11	9.3	12.8	14.8	16.7	18.6	21.0	a	25 46.99	302	50	10.0	7.8	III	43.260	7 25 17.57	--18 13 23.84	—18 1865
12	8.8	19.6	21.7	23.6	25.5	27.6	a	26 53.78	303	0	10.0	7.6	I	44.130	7 26 24.38	18 3 6.59	17 2010
13	8.7	58.0	59.5	3.8	6.0	8.2	b_2 c_3	27 8.18	303	34	10.0	7.7	III	42.050	7 26 38.84	17 29 45.36	17 2013
14	8.5	13.0	15.0	17.1	19.3	21.6	c	27 17.20	303	34	"	"	V	45.670	7 26 47.86	17 28 36.31	17 2015
15	8.2	8.2	10.5	12.5	14.9	16.8	c	28 12.58	304	22	10.0	7.9	III B	41.440	7 27 43.31	16 45 8.80	16 2001
16	8.8	31.4	33.5	35.7	37.8	40.0	c	28 35.68	304	22	"	"	V A	47.220	7 28 6.43	16 36 49.65	16 2006
17	9.1	55.2	57.1	59.0	1.0	3.2	a	30 28.79	306	16	10.0	7.6	I B	44.660	7 29 59.73	14 50 2.33	14 1979
18	9.0	15.0	17.1	19.0	20.7	23.0	a	30 48.63	306	16	"	"	III A	43.960	7 30 19.58	14 43 47.86	14 1980
19	9.1	53.7	56.0	58.0	0.4	2.2	c	30 58.06	306	16	"	"	III B	47.175	7 30 29.00	14 49 14.67	14 1982
20	9.1	17.9	20.0	22.3	24.4	26.5	c	31 22.22	306	16	"	"	V B	41.685	7 30 53.15	—14 51 0.43	—14 1984

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
21	9.2	44.9	47.0	49.1	51.3	53.4	c	32 49.14	305 48 10.0 7.5	III A 39.770	7 32 20.03	−15 13 10.29	−15 1932
22	9.4	43.3	45.3	47.4	49.6	51.8	c	33 47.48	305 48 " "	III B 42.120	7 33 18.36	15 18 54.02	15 1945
23	9.4	8.4	10.6	12.4	16.7	18.5	$c_3 d_2$	34 8.30	305 48 " "	VI 47.680	7 33 39.19	15 13 54.14	15 1951
24	9.0	4.2	6.4	8.5	10.6	12.8	c	35 8.50	305 48 " "	III (C) 49.750	7 34 39.38	15 19 41.06	15 1958
25	8.9	3.4	5.6	7.7	10.0	12.0	c	36 7.74	304 10 10.5 8.4	III B 43.145	7 35 38.44	16 56 39.14	16 2076
26	8.2	4.9	7.0	9.2	11.3	13.6	c	37 9.20	304 10 " "	III B 49.155	7 36 39.90	16 54 44.18	16 2081
27	8.7	8.2	10.4	12.5	14.8	16.9	c	38 12.56	304 10 " "	III 45.350	7 37 43.27	16 52 43.79	16 2089
28	7.8	53.5	55.6	57.7	59.9	2.1	c	38 57.76	304 10 " "	III A 45.210	7 38 28.47	16 49 32.08	16 2093
29	8.6	47.9	50.0	52.2	54.6	56.6	c	39 52.26	305 8 10.0 7.8	III B 50.270	7 39 23.06	15 56 21.57	15 2006
30	8.5	44.9	47.0	49.2	51.4	53.5	c	40 49.20	305 8 " "	III 51.070	7 40 20.01	−15 52 52.76	−15 2014
31	9.0	14.2	16.3	18.5	20.7	23.0	c	41 18.54	305 8 " "	V 46.210	7 40 49.34	−15 54 26.59	−15 2021
32	9.1	9.8	12.0	14.2	16.3	18.6	c	42 14.18	303 28 10.0 8.0	V 42.470	7 41 44.81	17 35 43.47	17 2149
33	8.6	1.8	3.8	6.0	8.4	10.3	c	43 6.06	305 42 10.5 8.5	V B 44.350	7 42 36.91	15 24 14.43	15 2043
34	9.3	27.9	30.1	34.3	36.0	38.7	$c_4 d_3$	43 25.81	305 42 " "	VI (B) 46.530	7 42 56.67	15 23 32.78	15 2048
35	8.7	10.3	12.4	14.6	16.8	18.9	c	44 14.60	305 42 " "	V A 42.120	7 43 45.46	15 18 29.07	15 2054
36	9.1	31.3	33.3	37.5	39.0	41.7	$c_4 d_3$	44 28.97	305 42 " "	VI A 39.910	7 43 59.83	15 19 11.56	15 2059
37	8.9	......	36.2	40.5	42.0	44.7	$c_5 d_3$	45 31.85	304 28 10.0 7.5	VI B 50.280	7 45 2.58	16 36 25.80	16 2145
38	8.9	36.7	39.0	41.0	43.2	45.3	c	46 41.04	304 28 " "	V B 49.070	7 46 11.76	16 36 49.38	16 2157
39	9.0	17.6	19.7	21.7	23.4	25.6	a	47 51.53	304 28 " "	III A 43.870	7 47 22.26	16 32 0.87	16 2166
40	9.1	39.6	41.8	43.7	45.5	47.7	a	49 13.59	304 28 " "	I A 43.450	7 48 44.32	−16 32 9.11	−16 2174
41	8.7	13.9	16.2	18.3	20.5	22.7	c	49 18.32	304 28 " "	III 48.275	7 48 49.05	−16 33 51.56	−16 2175
42	8.5	34.3	36.4	38.5	40.8	43.0	c	49 38.60	304 28 " "	V 42.910	7 49 9.32	16 35 35.00	16 2180
43	9.3	10.8	12.8	16.9	18.6	21.2	$c_4 d_3$	50 8.47	305 46 10.4 8.3	VI (C) 46.575	7 49 39.32	15 22 46.64	15 2119
44	9.2	32.4	34.7	36.6	38.6	40.4	e	51 6.88	305 46 " "	VII B 43.885	7 50 37.73	15 20 26.30	15 2127
45	8.0	56.5	58.7	0.7	2.6	4.4	e	51 30.92	305 46 " "	VII B 48.940	7 51 1.77	15 18 49.43	15 2133
46	8.1	51.8	54.0	55.9	57.9	59.7	e	52 26.21	305 46 " "	VII 49.250	7 51 57.07	15 15 30.28	15 2143
47	8.9	30.1	32.2	34.3	36.6	38.7	c	53 34.38	306 46 10.0 8.3	V 49.290	7 53 5.34	14 15 27.30	14 2299
48	8.3	54.4	56.5	58.6	0.7	2.8	c	53 58.60	306 46 " "	V C 47.700	7 53 29.53	14 22 24.15	14 2304
49	8.4	48.0	50.1	52.2	54.5	56.6	c	54 52.28	304 20 10.0 8.1	V B 41.960	7 54 22.97	16 47 8.88	16 2224
50	8.3	57.4	58.9	3.1	5.3	7.5	$b_2 c_3$	56 7.49	304 20 " "	III A 41.780	7 55 38.19	−16 40 45.04	−16 2237
51	8.5	23.1	25.3	27.3	29.6	31.7	c	56 27.40	304 20 " "	V B 47.210	7 55 58.09	−16 45 28.65	−16 2240
52	9 2	35.6	37.6	39.6	41.3	43.7	a	59 9.41	305 2 9.5 7.5	I 44.310	7 58 40.17	16 1 9.23	15 2222
53	9.3	12.5	14.8	16.8	19.0	21.0	c	59 16.82	305 2 " "	III 47.840	7 58 47.59	16 0 2.07	15 2223
54	8.8	48.5	50.8	52.9	55.2	57.3	c	59 52.94	305 2 " "	III B 46.895	7 59 23.70	16 3 34.21	15 2232
55	9.3	16.0	18.1	20.4	22.6	24.7	c	1 20.36	303 2 9.5 6.9	III B 45.340	8 0 50.92	18 4 10.86	17 2322
56	......	51.8	54.1	56.1	58.0	59.9	e	1 25.88	303 2 " "	V C 43.250	8 0 56.43	18 8 3.79	18 2162
57	8.5	17.0	19.2	21.5	25.6	27.4	$c_3 d_2$	2 17.04	303 2 " "	V (B) 42.350	8 1 47.59	18 5 8.81	17 2331
58	9.3	53.6	55.8	58.0	0.3	2.4	c	3 58.02	304 20 10.0 7.9	V 43.180	8 3 28.71	16 43 35.09	16 2310
59	8.7	15.9	18.1	20.2	22.6	24.7	c	6 20.30	303 12 10.0 7.5	III B 46.590	8 5 50.87	17 53 47.54	17 2372
60	8.9	43.4	45.6	47.6	50.0	52.1	c	6 47.74	303 12 " "	III C 44.180	8 6 18.31	−17 57 46.92	−17 2377
61	9.2	24.6	26.7	28.8	31.1	33.2	c	7 28.88	303 12 " "	III B 41.340	8 6 59.45	−17 55 28.71	−17 2383
62	9.1	40.2	42.3	44.5	46.8	48.8	c	8 44.52	303 12 " "	III B 38.920	8 8 15.09	17 56 15.58	17 2392
63	8.6	13.6	16.0	18.0	20.3	22.4	c	9 18.06	303 12 " "	III A 37.450	8 8 48.64	17 50 15.46	17 2395
64	9.1	51.4	53.6	55.8	58.0	0.2	c	9 55.80	303 12 " "	III 44.630	8 9 26.38	17 51 12.60.	17 2400
65	9.4	35.3	37.5	39.5	41.8	43.9	c	11 39.60	303 12 " "	III 43.070	8 11 10.18	17 51 43.14	17 2412
66	9.0	42.5	44.6	46.8	49.0	51.1	c	12 46.80	305 8 10.0 7.3	III 42.720	8 12 17.57	15 55 44.60	15 2357
67	7.7	13.0	15.1	17.2	19.4	21.5	c	13 17.24	305 8 " "	III B 44.170	8 12 48.00	15 58 30.72	15 2362
68	9.3	51.2	53.3	55.5	57.7	59.8	c	14 55.50	303 20 10.0 7.2	III A 41.320	8 14 26.10	17 41 2.84	17 2437
69	9.3	44.6	46.7	49.0	51.2	53.4	c	15 48.98	303 20 " "	III B 39.300	8 15 19.57	17 48 10.42	17 2444
70	9.3	35.8	38.1	40.3	42.5	44.6	c	16 40.26	303 20 " "	III A 42.090	8 16 10.86	−17 40 48.66	−17 2455
71	8.8	0.0	2.3	4.5	6.7	8.8	c	18 4.46	303 20 " "	III A 45.300	8 17 35.06	−17 39 47.62	−17 2466
72	9.5	42.6	44.6	46.7	48.6	50.7	a	19 16.77	303 20 " "	I B 49.360	8 18 47.36	17 44 58.05	17 2472[1]
73	9.4	13.7	15.9	17.9	20.3	22.5	c	19 18.06	303 20 " "	III (B) 49.410	8 18 48.65	17 44 57.58	17 2472[2]
74	9.3	0.5	2.8	4.7	6.8	8.7	e	19 34.64	303 12 10.0 7.7	VII B 42.180	8 19 5.22	17 55 16.87	17 2475
75	8.9	34.1	36.3	38.5	40.3	42.3	e	20 8.25	303 12 " "	VII A 38.010	8 19 38.84	17 50 8.33	17 2477
76	9.4	42.7	44.8	46.7	48.5	50.8	a	23 16.54	305 6 10.0 7.6	I 44.535	8 22 47.31	15 57 12.66	15 2443
77	8.9	57.9	0.0	1.8	3.6	5.9	a	23 31.68	305 6 " "	III 43.190	8 23 2.45	15 57 39.10	15 2446
78	9.0	4.3	6.4	8.7	10.8	13.0	c	24 8.64	303 24 10.0 8.1	III B 45.180	8 23 39.24	17 42 19.72	17 2510
79	9.0	46.2	48.3	50.4	52.7	54.8	c	24 50.48	303 24 " "	III 49.470	8 24 21.09	17 37 43.79	17 2515
80	9.1	38.5	40.6	42.9	45.1	47.1	c	25 42.84	304 16 10.0 8.4	V 42.010	8 25 13.53	−16 48 4.85	−16 2477
81	8.9	40.6	42.7	44.8	47.0	49.3	c	26 44.88	304 0 10.0 8.1	V B 40.820	8 26 15.54	−17 7 42.64	−16 2484
82	9.1	10.7	12.9	15.0	17.2	19.4	c	28 15.04	303 28 10.0 7.6	III 46.480	8 27 45.66	17 34 42.32	17 2536
83	9.4	9.6	11.8	13.9	16.2	18.4	c	29 13.98	303 56 10.0 7.6	III 42.220	8 28 44.64	17 8 2.97	16 2503
84	9.3	34.0	36.0	38.3	40.5	42.6	c	30 38.28	304 36 10.0 7.7	III 42.260	8 30 8.99	16 28 0.63	16 2510
85	9.2	45.3	47.5	49.6	51.8	54.0	c	31 49.64	307 2 10.0 7.6	III 41.520	8 31 20.57	14 2 8.62	13 2606
86	8.9	17.5	19.6	21.5	23.4	25.8	a	32 51.65	303 32 10.0 8.0	III 44.585	8 32 22.27	17 31 19.78	17 2580
87	......	23.1	25.3	27.5	29.6	31.8	c	33 27.46	302 58 9.5 6.9	III 41.940	8 32 58.02	18 6 13.30	17 2583
88	9.1	46.6	48.8	51.0	53.1	55.4	c	33 50.98	302 58 " "	....	8 33 21.55	18 3 22	17 2587
89	8.6	30.9	33.0	35.1	37.5	39.7	c	34 35.24	302 58 " "	III 44.790	8 34 5.81	18 5 18.97	17 2593
90	9.0	38.6	40.8	43.0	45.2	47.5	c	35 43.02	302 54 10.0 8.2	III A 46.880	8 35 13.59	−18 5 23.81	−17 2601
91	......	1.5	3.8	5.9	8.1	10.4	c	36 5.94	302 54 " "	V C 44.870	8 35 36.49	−18 15 43.85	−18 2435
92	9.0	40.1	42.2	44.5	46.7	48.9	c	36 44.48	302 54 " "	V B 40.540	8 36 15.04	18 13 54.60	18 2440
93	8.7	37.9	40.1	42.2	44.4	46.5	c	39 42.22	304 28 10.0 7.6	III B 42.090	8 39 12.92	−16 39 20.99	−16 2566

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
94	8.8	56.6	58.8	0.9	3.0	5.3	c	40 0.92	304	28	10.0	7.6	V	45.340	8 39 31.63	−16 35 5.31	−16 2569
95	9.1	54.4	56.5	58.6	1.0	3.0	c	41 58.70	305	8	10.0	7.5	III	43.120	8 41 29.47	15 55 46.27	15 2583
96	8.5	38.3	40.5	42.4	44.2	46.5	a	46 12.47	303	34	10.0	7.5	I	41.670	8 45 43.11	17 30 19.47	17 2665
97	8.9	17.1	19.3	21.2	23.1	25.2	a	46 50.84	306	20	10.0	7.7	I	46.750	8 46 21.71	14 42 34.13	14 2675
98	8.9	25.0	27.1	29.0	30.9	33.0	a	47 58.66	306	20	"	"	I A	40.670	8 47 29.54	14 41 16.71	14 2681
99	7.9	7.2	9.4	11.7	13.8	15.9	c	48 11.60	302	50	10.0	7.3	III	41.715	8 47 42.18	18 14 22.20	18 2506
100	9.0	50.0	51.9	53.8	55.8	58.1	a	49 23.90	304	10	10.0	7.4	I A	41.870	8 48 54.60	−16 51 0.33	−16 2624
101	8.0	24.2	26.2	28.3	30.7	32.8	c	49 28.44	304	10	"	"	V C	47.630	8 48 59.13	−16 58 51.46	−16 2625
102	8.4	2.7	4.8	7.0	8.8	10.7	e	49 36.91	304	10	"	"	VII A	43.870	8 49 7.61	16 50 22.42	16 2626
103	8.6	13.9	16.1	18.2	20.5	22.6	c	51 18.26	306	48	10.2	8.1	III	46.515	8 50 49.17	14 14 38.96	14 2704
104	9.1	19.8	21.9	23.9	25.9	27.7	e	51 54.02	304	42	10.0	7.5	V B	47.540	8 51 24.76	16 23 39.69	16 2634
105	6.5	50.6	52.8	54.8	56.7	58.5	e	52 24.87	304	42	"	"	VII A	40.520	8 51 55.61	16 19 25.90	16 2639
106	8.8	49.8	52.1	54.1	56.3	58.4	c	53 54.14	304	42	"	"	III B	39.070	8 53 24.88	16 26 22.60	16 2649
107	8.0	32.5	34.6	36.7	38.8	41.1	c	54 36.74	304	42	"	"	III	43.770	8 54 7.48	16 21 38.83	16 2653
108	8.9	28.9	31.0	33.2	35.6	37.6	c	55 33.26	304	42	"	"	III A	40.900	8 55 4.01	16 19 19.48	16 2659
109	8.1	18.4	20.5	22.7	25.0	27.0	c	56 22.72	305	18	10.0	7.3	III	43.230	8 55 53.52	15 45 48.08	15 2665
110	9.1	48.2	50.5	52.7	54.8	57.0	c	56 52.64	305	18	"	"	III	43.770	8 56 23.44	−15 45 37.87	−15 2668
111	.....	43.2	45.4	47.3	49.4	51.1	e	57 17.39	304	12	10.0	7.1	V	44.170	8 56 48.10	−16 51 33.98	16 2664
112	9.0	28.0	30.2	32.2	34.5	36.5	c	58 32.28	305	48	10.0	7.8	III	43.630	8 58 3.12	15 15 39.37	15 2678
113	8.9	51.5	53.6	55.8	58.0	0.2	c	59 55.82	302	56	10.0	7.4	III B	50.360	8 59 26.43	18 8 53.15	17 2730
114	8.9	45.4	47.6	49.6	51.9	54.0	c	1 49.70	302	56	"	"	III	43.100	9 1 20.31	18 7 59.23	17 2743
115	7.0	42.6	45.0	47.1	49.3	51.4	c	2 47.08	303	20	9.6	7.1	III B	40.710	9 2 17.72	17 47 58.25	17 2751
116	8.8	52.9	55.0	57.2	59.5	1.5	c	3 57.22	303	20	"	"	III A	42.040	9 3 27.88	17 41 4.51	17 2755
117	8.6	51.4	53.5	55.6	57.9	0.0	c	15 55.68	302	56	10.0	7.5	III	46.440	9 15 26.32	18 6 58.89	17 2823
118	8.0	44.7	46.8	48.6	50.7	52.9	a	18 18.82	303	34	10.0	7.2	I	49.440	9 17 49.52	17 27 59.52	17 2835
119	9.3	19.1	21.4	23.6	25.7	27.9	c	18 23.54	303	34	"	"	III C	46.100	9 17 54.23	17 35 30.96	17 2836
120	9.4	47.3	49.5	51.7	54.0	56.0	c	18 51.70	303	34	"	"	III B	47.010	9 18 22.39	−17 32 0.68	17 2841
121	8.1	38.0	40.3	42.4	44.7	46.9	c	20 42.46	303	22	10.0	7.2	III A	40.510	9 20 13.15	−17 39 37.99	−17 2847
122	8.9	26.0	28.2	30.5	32.6	34.7	c	21 30.40	303	22	"	"	III A	37.900	9 21 1.09	17 40 28.29	17 2853
123	9.0	15.8	18.0	19.9	21.7	24.0	a	22 50.01	303	22	"	"	I B	42.110	9 22 20.70	17 45 35.89	17 2859
124	9.1	52.8	55.0	57.1	59.4	1.4	c	22 57.14	304	48	10.0	7.6	V A	40.460	9 22 27.94	16 13 35.08	16 2787
125	9.0	3.5	5.6	7.9	10.0	12.2	c	24 7.84	304	48	"	"	III C	44.100	9 23 38.63	16 22 6.87	16 2796
126	8.8	51.0	53.2	55.4	57.5	59.7	c	24 55.36	303	40	10.0	8.0	III A	39.940	9 24 26.09	17 21 48.66	17 2870
127	8.7	30.6	32.9	34.9	36.9	38.8	e	25 4.85	303	40	"	"	V	45.150	9 24 35.57	17 23 23.77	17 2873
128	8.9	23.5	25.6	27.4	29.2	31.5	a	27 57.43	304	8	10.0	8.0	I B	50.430	9 27 28.19	16 56 54.71	16 2815
129	8.9	12.8	14.8	17.1	19.4	21.5	c	28 17.12	304	8	"	"	III B	42.630	9 27 47.88	16 59 24.92	16 2817
130	8.9	15.3	17.4	19.6	21.8	24.0	c	29 19.62	304	8	"	"	III	44.450	9 28 50.39	−16 55 36.45	−16 2824
131	8.1	18.4	20.6	22.8	24.9	27.0	c	30 22.74	305	12	10.0	8.1	III B	41.110	9 29 53.58	−15 55 51.37	−15 2837
132	9.1	0.2	2.3	4.5	6.7	8.9	c	31 4.52	305	12	"	"	III A	39.750	9 30 35.37	15 49 49.16	15 2839
133	8.6	30.2	32.4	34.6	36.8	38.8	c	33 34.56	305	14	9.8	7.3	III	46.815	9 33 5.42	15 48 49.26	15 2846
134	8.4	6.8	9.0	11.0	13.0	14.8	e	33 41.20	305	14	"	"	V A	41.720	9 33 12.06	15 47 12.50	15 2847
135	9.3	13.6	15.7	17.9	20.2	22.3	c	35 17.94	305	14	"	"	III B	41.880	9 34 48.80	15 53 38.16	15 2861
136	8.8	57.5	59.7	1.9	4.0	6.2	c	36 1.86	305	14	"	"	III B	41.790	9 35 32.72	15 53 40.06	15 2867
137	8.9	23.2	25.4	27.5	29.7	31.9	c	37 27.54	303	54	10.0	8.0	III	44.310	9 36 58.32	17 9 41.78	16 2862
138	8.8	30.0	32.1	34.2	36.5	38.7	c	38 34.30	302	52	9.2	6.7	III	43.940	9 38 5.02	18 11 53.48	17 2943
139	8.0	58.0	0.3	2.4	4.6	6.7	c	39 2.40	305	12	10.0	7.2	V	42.500	9 38 33.27	15 52 13.75	15 2879
140	9.3	39.1	41.4	43.5	45.7	47.8	c	40 43.50	303	50	10.0	7.3	III	46.530	9 40 14.29	−17 13 0.47	−17 2953
141	8.4	48.0	50.2	52.3	54.7	56.8	c	43 52.40	303	10	10.0	7.2	III	41.550	9 43 23.14	−17 54 38.92	−17 2968
142	8.6	49.4	51.5	53.6	55.9	58.0	c	44 53.68	303	10	"	"	III B	39.620	9 44 24.42	17 58 30.01	17 2973
143	8.7	10.5	12.8	14.8	17.2	19.3	c	45 14.92	303	10	"	"	V A	42.200	9 44 45.68	17 51 12.15	17 2975
144	9.0	52.5	54.6	56.8	58.8	1.0	c	46 56.74	304	48	10.0	8.0	III	41.820	9 46 27.60	16 16 28.94	16 2901
145	9.2	22.4	24.5	26.7	28.9	31.0	c	48 26.70	303	32	10.0	7.4	III C	46.540	9 47 57.48	17 37 29.63	17 2991
146	7.9	3.5	5.7	7.8	10.1	12.3	c	49 7.88	303	32	"	"	III A	48.120	9 48 38.67	17 27 17.98	17 2994
147	9.0	35.8	38.1	40.2	42.5	44.7	c	50 40.26	303	26	10.0	7.5	III B	49.000	9 50 11.05	17 39 30.20	17 3003
148	8.9	25.0	27.0	29.4	31.6	33.8	c	51 29.36	303	26	"	"	III	43.020	9 51 0.15	17 38 11.34	17 3007
149	8.8	37.5	39.6	41.8	44.0	46.2	c	52 41.82	302	52	10.0	7.3	III	46.450	9 52 12.58	18 11 7.69	17 3015
150	8.5	13.4	15.6	17.6	19.6	21.6	e	52 47.63	303	56	9.5	7.0	VII	43.320	9 52 18.46	−17 8 5.27	−16 2924
151	8.6	24.4	26.6	28.6	30.8	33.0	c	55 28.68	302	58	9.6	7.0	III C	47.890	9 54 59.46	−18 11 7.43	−17 3026
152	9.4	3.3	5.7	7.6	9.9	12.0	c	56 7.70	302	58	"	"	III B	44.770	9 55 38.48	18 8 54.47	17 3032
153	8.6	11.5	13.7	15.8	18.2	20.3	c	57 15.90	302	58	"	"	III A	41.380	9 56 46.69	18 3 31.26	17 3037
154	8.0	39.4	41.7	43.8	46.0	48.0	c	57 43.78	303	38	10.0	7.8	V B	39.160	9 57 14.61	17 30 39.98	17 3038
155	9.4	34.6	36.7	38.9	41.2	43.3	c	58 38.94	303	38	"	"	V A	37.120	9 58 9.77	17 24 50.66	17 3039
156	8.1	28.1	30.4	32.4	34.3	36.1	e	59 2.40	304	22	10.0	7.3	VII	43.950	9 58 33.28	16 41 52.72	16 2949
157	8.0	14.0	16.2	18.5	20.7	22.9	c	0 18.46	303	36	10.0	7.2	III	46.060	9 59 49.30	17 27 14.40	17 3055
158	9.1	36.8	38.8	40.6	42.6	45.0	a	2 10.61	305	10	10.0	7.4	I C	43.260	10 1 41.54	16 0 30.34	15 2978
159	8.5	9.2	11.4	13.5	15.7	17.9	c	2 13.54	305	10	"	"	III A	42.440	10 1 44.47	15 51 4.67	15 2979
160	9.0	2.0	4.0	6.3	8.5	10.7	c	3 6.30	305	10	"	"	III B	46.020	10 2 37.23	−15 56 24.64	−15 2983
161	8.9	6.8	9.0	11.0	13.4	15.5	c	4 11.14	302	46	10.0	7.0	III A	40.910	10 3 41.95	−18 15 42.09	−18 2851
162	8.6	7.1	9.2	11.1	13.0	15.3	a	5 41.37	302	46	"	"	I B	40.300	10 5 12.18	18 22 22.18	18 2853
163	8.0	42.8	44.9	46.8	48.6	50.9	a	6 16.99	302	56	10.0	7.5	I A	37.860	10 5 47.82	18 6 39.89	17 3078
164	9.0	26.3	28.3	30.4	34.9	36.5	$c_1 d_2$	6 26.18	302	56	"	"	V B	36.610	10 5 57.01	18 13 33.00	18 2856
165	9.3	51.1	53.4	55.5	57.7	59.9	c	7 55.52	305	26	9.5	6.9	III A	41.040	10 7 26.49	15 35 32.35	15 3001^1
166	8.7	22.0	24.2	26.3	28.2	30.0	e	7 56.44	305	26	"	"	V A	41.230	10 7 27.41	[15 35 28.82]	15 3001^2
167	9.4	53.1	55.1	57.4	59.6	1.8	c	9 57.40	303	30	10.0	7.4	III A	39.190	10 9 28.28	17 32 14.59	17 3095
168	8.9	24.7	26.8	29.0	31.2	33.5	c	10 29.04	303	30	"	"	III B	43.680	10 9 59.92	−17 37 16.02	−17 3099

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
169	9.1	55.1	57.4	59.5	1.7	3.9	c	12 59.52	303 50 10.0 7.6	III	45.190	10 12 30.43	−17 13 32 54	−17 3110
170	8.6	4.6	6.6	8.5	10.3	12.6	a	14 38.62	303 28 10.0 7.9	I	43.190	10 14 9.52	−17 36 11.67	−17 3116
171	8.6	1.2	3.4	5.5	7.7	9.9	c	15 5.54	302 48 10.0 7.4	III	40.770	10 14 36.41	−18 17 1.21	−18 2894
172	9.4	2.3	4.5	6.6	8.8	11.0	c	16 6.64	304 14 9.5 6.9	III A	43.895	10 15 37.58	16 46 42.58	16 3025
173	9.3	18.7	21.0	23.1	25.4	27.4	c	16 23.12	304 14 " "	V A	46.940	10 15 54.07	16 45 44.32	16 3026
174	9.3	56.6	58.8	0.9	3.0	5.1	c	17 0.88	304 14 " "	V A	47.390	10 16 31.83	16 45 35.79	16 3031
175	8.9	43.5	45.6	47.4	49.5	51.7	a	19 17.52	304 14 " "	I	42.820	10 18 48.47	16 50 17.88	16 3040
176	9.0	29.2	31.6	33.6	35.8	37.8	c	19 33.60	304 14 " "	III C	41.650	10 19 4.54	16 57 7.73	16 3043
177	8.5	51.7	53.9	56.0	0.3	1.9	$c_3 d_2$	19 51.69	304 14 " "	VI C	46.425	10 19 22.64	16 55 35.80	16 3045
178	9.0	19.6	21.7	23.5	25.4	27.8	a	24 53.78	303 0 10.0 7.2	I	43.690	10 24 24.70	18 4 5.63	17 3160
179	8.6	9.1	11.3	13.5	15.6	17.9	c	25 13.48	303 20 10.0 7.1	III	44.080	10 24 44.42	17 43 57.74	17 3161
180	8.5	45.3	47.5	49.6	51.7	53.9	c	25 49.60	304 54 10.0 7.1	III	44.630	10 25 20.61	−16 9 42.36	−15 3069
181	8.6	56.4	58.4	0.3	2.1	4.5	a	29 30.39	303 46 9.4 6.8	I	41.790	10 29 1.37	−17 18 40.83	−17 3177
182	8.7	30.9	33.2	35.4	37.6	39.6	c	29 35.34	303 46 " "	V	45.890	10 29 6.32	17 17 23.09	17 3179
183	8.6	52.4	54.5	56.7	59.0	1.1	c	30 56.74	304 24 9.4 6.5	III	41.480	10 30 27.75	16 40 45.73	16 3088
184	7.9	42.8	45.1	47.0	48.9	51.0	e	31 16.88	303 8 9.4 6.5	VII C	41.900	10 30 47.83	18 3 8.00	17 3187
185	9.1	17.0	19.2	21.4	23.6	25.7	c	32 21.38	303 8 " "	V A	46.610	10 31 52.35	17 51 56.94	17 3192
186	9.3	6.7	9.1	10.9	12.9	14.7	e	32 41.09	305 0 9.5 6.4	VII	43.920	10 32 12.13	16 3 57.84	15 3090
187	8.9	47.3	49.5	51.7	53.9	56.1	c	35 51.70	302 50 9.2 6.4	III B	47.715	10 35 22.67	18 16 5.80	18 2995
188	9.2	17.5	19.6	21.8	24.0	26.2	c	36 21.82	302 50 " "	V	46.800	10 35 52.80	18 13 9.95	17 3211
189	8.8	8.7	10.8	12.9	15.3	17.4	c	38 13.02	303 4 10.0 7.3	III	41.340	10 37 44.02	18 0 53.02	17 3217
190	8.7	1.9	4.1	6.3	8.6	10.7	c	39 6.32	302 44 9.5 6.3	III	42.500	10 38 37.31	−18 20 32.75	−18 3008
191	8.8	3.6	5.8	8.0	10.1	12.4	c	40 7.98	305 12 10.0 7.3	III	44.180	10 39 39.07	−15 51 52.06	−15 3120
192	9.2	57.6	59.7	1.5	3.2	5.7	a	41 31.36	305 12 " "	I A	41.370	10 41 2.45	15 49 31.15	15 3122
193	8.0	4.7	6.9	8.9	11.3	13.4	c	42 9.04	302 44 9.7 6.6	III	41.670	10 41 40.05	18 20 48.83	18 3023
194	8.5	51.9	54.0	56.2	58.3	0.4	c	42 56.16	305 30 9.6 6.7	V	44.930	10 42 27.27	15 33 37.99	15 3130
195	9.0	28.4	30.7	32.6	34.4	36.4	e	46 2.51	303 36 9.3 6.6	V B	42.670	10 45 33.57	17 31 41.51	17 3244
196	9.2	6.0	8.2	10.4	12.7	14.7	c	47 10.40	303 36 " "	III	42.180	10 46 41.47	17 28 36.98	17 3247
197	8.4	53.3	55.7	57.8	0.1	2.2	c	47 57.82	302 42 10.0 7.0	V	45.410	10 47 28.86	18 21 37.90	18 3044
198	8.9	27.6	29.9	32.0	34.2	36.4	c	50 32.02	304 8 10.2 7.5	V	43.645	10 50 3.13	16 56 7.03	16 3146
199	9.0	39.6	41.8	43.5	45.6	47.8	a	52 13.74	303 36 10.0 7.0	I	44.080	10 51 44.84	17 28 0.02	17 3260
200	8.8	27.7	29.9	32.0	34.3	36.5	c	52 32.08	303 22 10.0 7.5	III	46.570	10 52 3.17	−17 41 13.33	−17 3262
201	8.8	53.0	55.3	57.6	59.7	1.8	c	52 57.48	303 22 " "	V B	43.600	10 52 28.57	−17 45 24.42	−17 3264
202	8.6	32.6	34.8	56.8	38.7	40.7	e	53 6.69	303 22 " "	VII B	41.020	10 52 37.78	17 46 13.99	17 3265
203	8.4	44.8	47.1	49.2	51.5	53.6	c	54 49.24	303 58 10.0 7.0	V	46.470	10 54 20.36	17 5 14.15	16 3163
204	9.4	52.6	54.8	57.0	59.2	1.4	c	55 57.00	303 52 10.0 7.2	III	49.140	10 55 28.12	17 10 22.89	16 3165
205	9.4	23.0	25.2	27.3	29.2	31.0	e	55 57.18	303 52 " "	VII C	48.250	10 55 28.30	17 17 6.21	17 3277
206	8.5	10.8	13.0	15.0	19.4	21.1	$c_3 d_2$	57 10.79	304 12 9.2 6.7	V A	43.920	10 56 41.93	16 48 48.23	16 3174
207	9.0	56.8	59.0	1.0	3.4	5.5	c	58 1.14	304 12 " "	V C	47.140	10 57 32.28	16 57 27.69	16 3175
208	9.2	46.8	48.9	51.2	53.4	55.5	c	58 51.16	304 12 " "	III B	47.530	10 58 22.30	16 54 7.50	16 3179
209	8.5	52.3	54.3	56.6	58.7	0.9	c	2 56.56	303 48 9.4 6.1	III	45.420	11 2 27.72	17 15 36.05	17 3304
210	9.3	41.9	44.0	46.0	47.8	50.1	a	4 16.01	303 48 " "	I B	46.260	11 3 47.18	−17 18 33.40	−17 3309
211	8.6	8.1	10.0	12.0	13.9	16.4	a	4 42.30	302 46 10.0 6.7	III	41.670	11 4 13.45	−18 18 51.03	−18 3113
212	8.6	4.3	6.4	8.1	10.2	12.5	a	5 38.30	304 0 10.0 6.9	I A	41.880	11 5 9.48	17 1 27.85	16 3198
213	/8.8	51.2	53.3	55.2	57.0	59.4	a	6 25.24	304 0 " "	III B	38.470	11 5 56.42	−17 9 2.24	−16 3199

Reduction Elements. Zone 103.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
March 28.3....	0.000	+0.166	+0.139	−0.008	+0.150	+0.120
28.5....	−0.017	+0.134	+0.101			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		θ Canis Majoris		Piazzi VI. 303		γ Canis Majoris		29 Canis Majoris		μ Hydrae		φ Hydrae	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	309 8 9.45		295 46 8.25		305 34 13.20		296 40 9.00		304 44 8.75		304 42 8.25	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq	43.510	5 7.38	46.290	6 1.19	42.900	4 56.21	46.840	6 11.64	45.170	5 39.50		5 47.19
II	Red. to Mer.. ..	.520	0.11	.305	0.25	.920	0.14	.830	0.24	.160	0.15		0.15
VI	Inclination	.515		.340		.935		.910		.215		45.570	−0.45
VII	Refraction	.510	1 11.6	.345	2 0.2	.970	1 21.5	.875	1 55.8	.210	1 25.3	.610	1 25.5

		b^2 Hydrae		β Crateris	
		° ′ ″		° ′ ″	
	CIRCLE READING.	301 28 7.85		298 48 8.75	
		r	′ ″	r	′ ″
I	Microm. Eq ..		5 26.19		4 51.52
II	Red. to Mer.		0.19	42.640	0.19
VI	Inclination	44.505	−0.45	.700	−0.18
VII	Refraction .	.485	1 36.8	.720	1 47.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
θ Canis Majoris	6 50 1.31	11	+0.18	−41.97	309 12 5.3	35.1
51 H. Cephei	6 52 11.49	5	+0.04	[−42.25]	48 16	....
Piazzi VII. 303	6 55 0.22	11	+0.18	−41.92	295 50 9.5	35.1
γ Canis Majoris	6 59 43.07	11	+0.18	−41.91	305 37 48.1	35.0
29 Canis Majoris	7 15 0.72	11	+0.18	−42.00	296 44 25.1	35.0
μ Hydrae	10 21 44.27	11	+0.18	−42.00	304 48 23.1	36.2
9 H. Draconis	10 27 0.02	8	+0.16	[−41.94]	37 20	....
φ Hydrae	10 34 11.58	11	+0.18	−42.06	304 46 29.6	35.2
b^2 Hydrae	10 49 4.90	11	+0.18	−42.03	301 31 57.0	34.4
β Crateris	11 7 13.20	11	+0.18	−41.96	298 51 12.5	35.4

h		s
7.000	*dt*	−41.950
	Hourly rate	− 0.0167
		° ′ ″
	Adopted Equator Point	321 6 35.18

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 45	29.690	45.2	43.4
7 57	29.710	42.8	41.4
9 4	29.758	41.0	39.5
10 11	29.795	39.3	38.2
11 11	29.803	37.4	35.4

Notes.

118. Faint companion, n. p.

High wind during early part of zone.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
303	+0.184
304	0.184
305	0.184
306	0.184
307	0.184
308	+0.184

APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0						
	302°	303°	304°	305°	306°	307°	308°
h m	s	s	s	s	s	s	s
7 0	+12.306	+12.422	+12.537	+12.651	+12.761	+12.874	.....
7 30	12.254	12.366	12.474	12.581	12.688	12.793	......
8 0	12.242	12.344	12.446	12.546	12.645	12.743	......
8 30	12.267	12.361	12.454	12.545	12.633	12.722	+12.810
9 0	12.331	12.413	12.496	12.575	12.654	+12.734	+12.810
9 30	12.433	12.503	12.571	12.639	12.706	......	......
10 0	12.570	12.625	12.681	12.735	12.789	......	......
10 30	12.738	12.780	12.822	12.861	12.901	......	......
11 0	12.937	12.964	12.989	13.014	+13.041	......	......
11 30	+13.164	+13.173	+13.184	+13.195	......	......	......

APPARENT RIGHT ASCENSION.	$D =$ Z. D. N. to 1895.0							R					
	302°	303°	304°	305°	306°	307°	308°	302° 30′	303° 30′	304° 30′	305° 30′	306° 30′	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″	″
7 0	+ 5.94	+ 5.68	+ 5.41	+ 5.14	+ 4.86	+4.58	....	91.69	88.27	85.04	81.94	79.01	76.19
7 30	6.89	6.63	6.37	6.10	5.84	5.57	....	91.88	88.45	85.21	82.11	79.18	76.35
8 0	7.87	7.63	7.38	7.13	6.86	6.61	....	92.07	88.63	85.39	82.28	79.34	76.51
8 30	8.84	8.62	8.39	8.15	7.90	7.67	+7.42	92.30	88.86	85.61	82.49	79.54	76.70
9 0	9.80	9.58	9.38	9.17	8.94	+8.73	+8.50	92.56	89.10	85.84	82.72	79.76	76.91
9 30	10.71	10.52	10.35	10.16	9.97	....	....	92.73	89.27	86.00	82.87	79.91	77.06
10 0	11.57	11.42	11.27	11.11	10.95	....	....	92.90	89.43	86.16	83.02	80.06	77.20
10 30	12.36	12.25	12.13	12.01	11.87	....	....	93.15	89.68	86.40	83.25	80.28	77.41
11 0	13.07	13.00	12.91	12.82	+12.73	....	....	93.41	89.93	86.64	83.48	80.50	77.62
11 30	+13.69	+13.65	+13.60	+13.55	.....	....	....	93.67	90.18	86.88	83.71	80.72	77.84

1895 MARCH 29. ZONE 104. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.0	39.0	41.1	43.2	44.9	47.2	a	17 12.96	304 54 10.0	9.0	I	43.730	7 16 43.60	−16 9 4.60	−16 1914
2	9.0	15.3	17.2	19.1	20.9	23.3	a	17 49.03	304 54 "	"	I	47.060	7 17 19.67	16 8 0.93	16 1921
3	8.0	44.3	46.5	48.1	50.0	52.5	a	18 18.15	304 54 "	"	I	49.430	7 17 48.79	16 7 15.63	16 1923
4	9.3	12.8	14.8	16.7	18.5	21.0	a	18 46.64	304 54 "	"	III B	48.280	7 18 17.27	16 10 52.22	16 1927
5	8.2	13.5	15.5	17.2	19.2	21.5	a	19 47.18	305 20 9.5	8.3	I A	41.880	7 19 17.86	15 40 26.04	15 1799
6	8.8	33.1	35.1	37.0	38.8	41.0	a	21 6.81	305 20 "	"	I B	47.230	7 20 37.48	15 45 12.26	15 1815
7	9.0	2.6	4.5	6.5	8.4	10.6	a	22 36.33	305 20 "	"	I	42.530	7 22 7.00	15 43 29.12	15 1823
8	8.6	41.4	43.5	45.6	47.8	50.0	c	22 45.66	305 20 "	"	III	48.455	7 22 16.34	15 41 36.05	15 1825
9	9.0	58.7	0.8	2.9	5.2	7.3	c	24 2.98	306 24 10.0	9.6	III	46.360	7 23 33.77	14 38 13.04	14 1914
10	8.8	13.0	15.0	16.8	18.6	21.0	a	25 46.44	307 6 10.0	9.3	I	44.370	7 25 17.30	−13 56 49.71	−13 2052
11	9.3	15.2	17.0	18.9	20.9	23.2	a	26 48.75	306 0 9.7	8.8	I A	40.390	[7 26 19.49]	−15 0 55.25	−14 1939
12	9.3	31.9	34.0	36.2	38.1	39.9	e	27 6.39	306 0 "	"	V B	45.265	7 26 37.12	−15 5 50.82	−15 1873

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
13	8.6	39.8	41.7	43.6	45.5	47.8	a	27 13.40	306 0	9.7	8.8	III B	47.055	7 26 44.13	−15 5 16.28	−15 1875
14	8.6	38.0	40.2	42.3	44.5	46.7	c	28 42.34	304 40	9.4	8.3	III	45.430	7 28 12.93	16 22 38.26	16 2008
15	9.2	29.0	31.2	33.4	35.6	37.7	c	29 33.38	305 38	9.5	8.8	III C	46.500	7 29 4.06	15 30 41.84	15 1899
16	9.2	39.8	42.0	44.0	46.3	48.5	c	30 44.12	305 38	"	"	III	41.570	7 30 14.81	15 25 50.15	15 1907
17	9.0	18.0	20.3	22.3	24.5	26.7	c	31 22.36	305 38	"	"	III A	39.050	7 30 53.05	15 23 24.07	15 1915
18	9.0	5.6	7.6	9.6	11.4	13.7	a	32 39.40	305 16	9.3	8.7	I	41.440	7 32 10.05	15 47 53.94	15 1930
19	9.1	48.4	50.6	52.3	54.2	56.6	a	33 22.25	305 16	"	"	I B	46.120	7 32 52.89	15 49 38.31	15 1939
20	9.0	19.7	22.0	24.2	26.4	28.5	c	33 24.16	305 16	"	"	III B	42.315	7 32 54.80	−15 50 51.79	−15 1940
21	8.2	1.2	3.3	5.5	7.7	9.8	c	34 5.50	305 16	"	"	V B	47.780	7 33 36.14	15 49 7.40	−15 1950
22	8.8	58.1	0.0	2.0	3.9	6.3	a	35 31.88	305 16	"	"	I	41.490	7 35 2.52	15 47 54.05	15 1965
23	9.1	52.6	54.6	56.6	58.4	0.8	a	36 26.23	306 44	10.0	9.6	I C	46.290	7 35 57.01	14 24 44.90	14 2084
24	9.5	35.2	37.2	39.5	41.6	43.6	c	36 39.42	306 44	"	"	V A	40.600	7 36 10.22	14 16 52.93	14 2089
25	......	28.1	30.1	32.2	34.2	36.0	e	37 2.61	306 44	"	"	V A	41.170	7 36 33.41	14 16 42.13	14 2101
26	9.1	59.4	1.5	3.4	5.5	7.1	e	37 33.61	305 2	10.0	9.5	VII B	45.500	7 37 4.22	16 3 52.40	15 1981
27	8.9	46.8	49.0	51.0	53.0	54.8	e	38 21.15	305 2	"	"	VII C	49.130	7 37 51.75	16 5 55.15	15 1989
28	9.2	43.4	45.6	47.7	49.8	52.2	c	39 47.74	305 2	"	"	III	43.150	7 39 18.35	16 1 24.26	15 2004
29	9.5	29.9	32.3	34.2	36.1	38.0	e	40 4.33	305 2	"	"	VII B	46.335	7 39 34.94	16 3 37.31	15 2007
30	8.9	58.2	0.3	4.6	6.2	8.9	c_4 d_3	40 56.03	305 2	"	"	VI B	45.320	7 40 26.63	−16 3 57.11	−15 2017
31	9.0	57.0	59.2	1.2	3.0	4.9	e	41 31.49	306 20	10.5	9.9	VII	47.815	7 41 2.23	−14 41 52.00	−14 2197
32	9.2	2.5	4.8	7.0	8.8	10.7	e	42 36.86	304 8	9.5	8.3	V	46.250	7 42 7.39	16 54 29.60	16 2122
33	9.3	18.9	21.1	22.9	24.8	27.1	a	45 52.67	306 2	10.0	8.9	I	47.935	7 45 23.39	14 59 51.73	14 2233
34	8.7	28.7	30.8	32.7	34.5	36.9	a	47 2.43	306 2	"	"	I	48.860	7 46 33.15	14 59 34.42	14 2240
35	8.8	7.9	9.9	11.8	13.7	16.0	a	47 41.57	306 2	"	"	I	47.150	7 47 12.28	15 0 7.45	14 2245
36	9.3	47.4	49.6	51.6	54.0	56.0	c	47 51.72	306 2	"	"	V B	43.490	7 47 22.43	15 4 32.32	14 2247
37	8.9	13.7	15.9	18.0	22.3	23.9	c_3 d_2	48 13.74	306 2	"	"	V (B)	45.910	7 47 44.45	15 3 46.03	14 2251
38	8.8	49.8	52.0	54.0	56.0	57.9	e	48 23.90	303 16	10.0	8.9	VII	49.120	7 47 54.33	17 45 37.81	17 2198
39	8.6	6.0	8.3	10.5	12.6	14.8	c	50 10.44	303 16	"	"	III C	49.030	7 49 40.86	17 52 7.44	17 2220
40	9.0	51.2	53.4	55.7	58.0	0.0	c	50 55.66	303 16	"	"	III B	50.535	7 50 26.08	−17 48 25.85	−17 2229
41	9.4	32.0	34.2	36.2	38.5	40.8	c	52 36.34	304 30	10.0	9.2	III A	43.010	7 52 6.90	−16 30 18.60	−16 2204
42	9.4	15.7	17.9	20.0	......	24.5	c	53 20.08	304 30	"	"	III B	45.290	7 52 50.63	16 36 3.59	16 2207
43	9.0	50.4	52.5	54.6	56.7	58.9	c	54 54.62	304 30	"	"	III C	44.060	7 54 25.16	16 39 40.72	16 2225
44	8.8	9.5	11.7	13.8	15.9	18.0	c	55 13.78	304 30	"	"	V B	50.230	7 55 44.33	16 34 29.70	16 2226
45	8.4	18.0	19.6	23.8	25.9	28.1	b_2 c_3	57 28.09	306 4	10.0	8.9	III	45.560	7 56 58.80	14 58 41.94	14 2331
46	9 1	50.6	52.7	54.4	56.3	58.6	a	58 24.24	306 4	"	"	I C	46.550	7 57 54.93	15 4 50.00	14 2340
47	8.9	24.6	26.8	28.8	31.1	33.2	c	58 28.90	306 4	"	"	III	42.350	7 57 59.60	14 59 43.93	14 2341
48	9.1	35.8	38.0	40.0	42.4	44.4	c	59 40.12	304 54	10.0	8.8	III C	47.425	7 59 10.70	16 14 36.90	16 2266
49	9.1	2.0	4.2	6.4	8.6	10.9	c	0 6.42	304 54	"	"	V B	41.825	7 59 37.00	16 13 11.79	16 2271
50	9.4	7.8	9.8	11.6	13.5	15.7	a	1 41.54	304 54	"	"	III A	48.325	8 1 12.13	−16 4 38.90	−15 2250
51	8.6	45.4	47.6	49.7	51.8	54.0	c	1 49.70	304 54	"	"	III	51.490	8 1 20.29	−16 6 52.87	−15 2253
52	9.2	43.0	45.1	47.3	49.5	51.6	c	2 47.30	305 16	10.0	9.0	V	43.990	8 2 17.92	15 47 16.39	15 2260
53	9.0	42.0	44.0	46.0	47.8	50.0	a	4 15.65	306 10	10.5	10.2	I	46.950	8 3 46.36	14 52 15.96	14 2385
54	9.0	19.6	21.7	23.9	26.1	28.3	c	4 23.92	306 10	"	"	III (B)	45.980	8 3 54.62	14 55 48.93	14 2387
55	9.0	32.9	34.9	37.2	39.2	41.4	c	4 37.12	306 10	"	"	V B	43.665	8 4 7.82	14 56 33.66	14 2389
56	9.0	37.4	39.4	41.4	43.1	45.4	a	6 11.45	303 26	10.0	9.0	I	43.170	8 5 41.89	17 37 37.69	17 2371
57	9.6	33.1	35.3	37.1	39.0	41.3	a	7 7.01	305 2	10.0	9.2	I A	42.310	8 6 37.61	15 58 35.28	15 2299
58	9.1	6.9	9.0	11.1	13.3	15.4	c	7 11.14	305 2	"	"	V	45.110	8 6 41.73	16 0 56.94	15 2300
59	9.3	5.3	7.3	9.5	11.7	13.8	c	8 9.52	305 2	"	"	III C	43.180	8 7 40.10	16 8 0.71	16 2345
60	9.1	45.6	47.7	49.8	52.1	54.3	c	8 49.90	306 24	10.0	9.2	III	45.300	8 8 20.63	−14 38 49.86	−14 2422
61	9.1	37.4	39.5	41.6	43.5	45.3	e	9 11.66	304 44	10.0	9.0	V	45.000	8 8 42.23	−16 19 0.71	−16 2350
62	8.2	7.6	9.7	11.8	14.0	16.1	c	11 11.84	305 0	10.0	9.0	III B	41.230	8 10 42.43	16 7 26.41	15 2343
63	9.4	25.9	27.9	30.1	32.4	34.6	c	11 30.18	305 0	"	"	V	46.490	8 11 0.78	16 2 32.13	15 2347
64	9.4	4.4	6.5	8.6	10.9	13.0	c	12 8.68	305 0	"	"	V C	49.775	8 11 39.27	16 7 55.53	16 2374
65	8.1	48.5	50.7	52.8	54.6	56.5	e	12 22.86	305 0	"	"	V	52.150	8 11 53.46	16 0 43.80	15 2356
66	9.3	11.0	13.3	15.4	17.5	19.7	c	13 15.38	305 0	"	"	V C	49.835	8 12 45.97	16 7 54.74	16 2382
67	9.0	37.1	39.3	41.3	43.2	45.0	e	14 11.54	305 54	10.0	9.1	VII B	50.115	8 13 42.22	16 10 34.73	15 2370
68	......	52.6	54.8	56.8	58.7	0.5	e	14 27.05	305 54	"	"	VII	50.610	8 13 57.74	15 7 11.75	14 2465
69	9.0	27.8	29.9	31.9	34.2	36.4	c	15 32.04	305 54	"	"	V B	46.620	8 15 2.72	15 11 42.16	15 2378
70	9.1	3.3	5.6	7.8	9.9	12.0	c	16 7.72	305 54	"	"	V C	43.340	8 15 38.39	−15 15 57.83	−15 2382
71	9.0	42.9	45.0	47.2	49.3	51.6	c	16 47.20	305 54	"	"	III B	45.095	8 16 17.88	−15 12 11.60	−15 2388
72	8.9	23.2	25.3	27.4	29.6	31.7	c	17 27.44	305 54	"	"	III A	42.150	8 16 58.13	15 6 39.87	14 2487
73	9.0	52.6	54.9	56.8	59.0	1.0	c	18 56.86	304 58	10.0	9.4	III	46.670	8 18 27.46	16 4 30.69	15 2409
74	9.4	37.5	39.7	42.0	44.0	46.2	c	19 41.88	304 58	"	"	III B	48.560	8 19 12.47	16 7 8.46	15 2414
75	8.7	20.2	22.3	24.5	26.7	28.9	c	20 24.52	305 54	10.0	8.9	V C	48.480	8 19 55.20	15 14 20.71	15 2419
76	8.0	55.3	57.5	59.4	1.5	3.2	e	20 29.75	305 54	"	"	VII	47.770	8 20 0.43	15 8 8.36	14 2504
77	8.2	34.9	37.0	39.2	41.3	43.5	c	21 39.18	305 54	"	"	V A	43.570	8 21 9.87	15 6 14.24	14 2515
78	9.2	35.5	37.8	39.9	42.1	44.3	c	22 39.92	305 48	10.0	9.0	III	43.925	8 22 10.59	15 15 22.53	15 2438
79	8.1	52.8	55.0	57.1	59.3	1.5	c	22 57.14	305 48	"	"	V B	43.170	8 22 27.81	15 18 51.13	15 2441
80	9.6	41.8	44.0	46.3	48.5	50.6	c	24 46.24	305 34	10.0	8.9	III	45.730	8 24 16.89	−15 28 49.24	−15 2453
81	9.0	56.0	58.2	0.3	2.7	4.7	c	25 0.38	305 34	"	"	V A	43.260	8 24 31.04	−15 26 22.16	−15 2456
82	7.7	11.5	13.6	15.6	17.4	19.8	a	26 45.36	305 34	"	"	I	42.320	8 26 16.01	15 29 54.76	15 2472
83	9.3	44.9	46.5	50.7	52.7	55.2	b_2 c_3	26 55.05	304 28	9.6	8.6	III B	39.210	8 26 25.59	16 40 12.31	16 2485
84	9.0	9.0	11.1	13.3	15.6	17.6	c	27 13.32	304 28	"	"	V B	39.480	8 26 43.86	16 40 7.47	16 2488
85	9.2	48.3	50.6	52.5	54.7	56.9	c	27 52.60	304 28	"	"	V A	42.315	8 27 23.16	−16 32 44.65	−16 2493

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
86	9.2	11.6	13.6	15.7	18.0	20.2	c	29 15.82	304 28	9.6	8.6	III B	41.920	8 28 46.37	−16 39 21.03	−16 2504
87	9.3	48.1	50.2	52.4	54.7	56.9	c	29 52.46	304 28	"	"	V B	46.820	8 29 23.01	16 37 47.43	16 2507
88	9.1	46.4	48.6	50.4	52.4	54.2	e	30 20.60	304 44	10.0	8.9	V	47.570	8 29 51.18	16 18 18.38	16 2509
89	9.1	18.8	20.9	23.0	25.3	27.4	c	32 23.08	306 44	10.3	9.3	III A	44.480	8 31 53.84	14 15 57.55	14 2586
90	8.8	37.4	39.5	41.6	43.9	46.0	c	32 41.68	306 44	"	"	V C	45.800	8 32 12.43	−14 25 13.52	−14 2588
91	9.6	9.2	11.4	13.7	16.0	18.3	c	34 13.72	305 22	10.0	8.8	III B	44.520	8 33 44.35	−15 44 29.85	−15 2531
92	9.6	49.2	51.5	53.5	55.7	57.4	e	34 23.74	305 22	"	"	V B	41.720	8 33 54.37	15 45 23.87	15 2533
93	8.1	27.7	29.8	31.9	33.9	35.6	e	35 2.07	305 22	"	"	VII	45.920	8 34 32.71	15 40 49.96	15 2538
94	9.4	35.7	37.9	39.9	42.2	44.4	c	36 40.02	305 26	9.5	8.4	V C	48.990	8 36 10.66	15 42 17.84	15 2547
95	6.5	0.2	2.4	4.3	6.3	8.5	a	37 34.13	305 26	"	"	III A	41.420	8 37 4.78	15 35 2.15	15 2554
96	......	36.2	38.2	40.0	42.0	44.2	a	38 9.91	305 26	"	"	III (B)	42.870	8 37 40.56	15 41 3.00	15 2557
97	8.5	27.0	29.0	31.2	33.4	35.4	c	38 31.20	305 26	"	"	V	43.435	8 38 1.85	15 37 38.82	15 2558
98	8.7	32.4	34.0	38.0	40.2	42.3	b_2 c_3	39 42.40	305 26	"	"	III A	39.650	8 39 13.06	15 35 36.78	15 2569
99	9.3	54.7	56.5	0.9	2.7	5.2	c_4 d_3	39 52.40	305 26	"	"	VI	45.230	8 39 23.06	15 37 4.91	15 2570
100	9.3	43.7	45.8	48.0	50.3	52.3	c	40 48.02	305 26	"	"	V B	48.290	8 40 18.67	−15 39 20.02	−15 2574
101	9.4	25.7	27.9	29.9	32.0	33.7	e	41 0.14	305 26	"	"	VII	48.205	8 40 30.80	−15 36 8.11	−15 2577
102	9.5	18.3	20.5	22.4	24.4	26.2	e	41 52.65	305 26	"	"	V C	47.965	8.41 23.30	15 42 39.13	15 2582
103	8.8	21.9	23.9	26.0	28.3	30.3	c	45 26.08	305 22	9.7	8.5	III	49.840	8 44 56.74	15 39 37.68	15 2600
104	9.2	9.5	11.7	13.7	15.9	18.2	c	46 13.80	305 22	"	"	III	44.640	8 45 44.45	15 41 17.70	15 2604
105	8.8	33.9	36.0	38.1	40.3	42.5	c	46 38.16	305 22	"	"	V	46.850	8 46 8.82	15 40 35.77	15 2607
106	8.9	14.8	16.8	18.8	21.0	27.4	c_1 d_1	47 18.91	306 0	9.6	8.6	V A	40.580	8 46 49.62	15 1 19.68	14 2677
107	9.3	29.1	31.3	33.2	35.6	37.7	c	48 33.38	306 0	"	"	III B	39.510	8 48 4.08	15 8 8.92	14 2689
108	9.1	7.5	9.7	11.8	14.0	16.1	c	49 11.82	306 0	"	"	III A	43.350	8 48 42.53	15 0 26.93	14 2691
109	9.2	25.5	27.5	29.7	31.7	33.8	c	49 29.64	306 0	"	"	V A	44.500	8 49 0.35	15 0 5.10	14 2695
110	9.4	14.6	16.7	18.7	20.8	22.5	e	49 48.94	305 18	9.8	8.6	VII A	39.410	8 49 19.59	−15 43 44.59	−15 2627
111	......	55.6	57.7	59.7	1.5	3.5	e	50 29.88	305 18	"	"	VII A	39.220	8 50 0.53	−15 43 48.46	−15 2629
112	9.1	4.2	6.4	8.6	10.7	12.9	c	52 8.56	305 18	"	"	V B	50.660	8 51 39.21	15 46 38.02	15 2642
113	9.4	45.4	47.6	49.6	51.9	53.9	c	53 49.68	306 26	10.0	9.0	III	50.560	8 53 20.43	14 35 23.05	14 2712
114	9.3	30.9	33.0	35.1	37.3	39.3	c	54 35.12	306 26	"	"	III	51.385	8 54 5.87	14 35 7.42	14 2715
115	8.8	28.7	30.8	32.9	37.0	38.8	c_3 d_2	55 28.63	306 26	10.0	9.1	V	46.460	8 54 59.38	14 36 42.51	14 2720
116	......	11.6	13.4	17.8	19.5	22.1	c_4 d_3	56 9.29	305 40	10.0	9.2	VI	43.685	8 55 39.98	15 23 38.07	15 2664
117	8.0	36.5	38.6	40.7	42.8	44.9	c	16 40.70	305 58	10.0	8.0	III C	45.950	9 16 11.44	15 11 26.15	14 2828
118	9.1	9.3	11.6	13.7	15.6	17.5	e	16 43.92	305 58	"	"	V A	45.310	9 16 14.67	15 1 57.14	14 2830
119	9.4	35.0	37.4	39.4	41.6	43.7	c	18 39.42	304 54	10.0	8.3	III A	40.620	9 18 10.10	16 7 30.34	15 2774
120	8.1	13.2	15.4	17.6	19.7	21.9	c	19 17.56	304 54	"	"	III B	39.650	9 18 48.23	−16 14 17.60	−16 2770
121	9.1	59.1	1.0	3.4	5.7	7.9	c	20 3.42	305 4	10.0	8.3	III A	46.090	9 19 34.12	−15 55 45.21	−15 2782
122	9.0	54.7	56.8	58.9	1.2	3.3	c	20 58.98	305 4	"	"	III A	40.630	9 20 29.68	15 57 30.24	15 2788
123	8.9	48.3	50.4	52.3	54.2	56.5	a	22 22.19	305 4	"	"	I	41.380	9 21 52.88	16 0 30.32	15 2794
124	8.4	23.2	25.2	27.4	29.5	31.7	c	22 27.40	305 4	"	"	III	40.785	9 21 58.09	16 0 42.31	15 2796
125	8.9	40.3	42.4	44.6	46.8	48.9	c	22 44.60	305 4	"	"	V B	40.645	9 22 15.29	16 3 59.13	15 2798
126	9.3	17.4	19.6	21.6	23.6	25.4	e	22 51.75	305 4	"	"	VII B	40.290	9 22 22.44	16 4 6.03	15 2801
127	9.4	57.3	59.5	1.6	3.8	5.9	c	24 1.62	305 4	"	"	V B	39.040	9 23 32.31	16 4 30.23	15 2807
128	8.9	46.6	48.8	50.6	52.7	54.6	e	24 20.89	305 4	"	"	V B	36.815	9 23 51.58	16 5 13.02	15 2809
129	8.7	43.3	45.4	47.5	49.6	51.8	c	26 47.52	306 44	10.0	8.5	III B	44.610	9 26 18.34	14 22 39.12	14 2872
130	8.8	35.6	37.7	39.8	42.0	44.0	c	27 39.82	306 44	"	"	III	45.150	9 27 10.64	−14 19 15.19	−14 2876
131	9.0	18.4	20.6	22.7	24.9	27.0	c	28 22.72	305 14	9.5	7.7	III	46.035	9 27 53.44	−15 49 3.07	−15 2826
132	9.5	3.0	5.1	7.5	11.9	13.4	c_3 d_2	29 3.09	303 14	10.0	8.1	V	44.590	9 28 33.68	17 49 36.82	17 2895
133	9.3	11.0	13.3	15.3	17.4	19.6	c	30 15.32	306 26	10.0	8.8	III A	40.380	9 29 46.13	14 35 33.28	14 2888
134	8.9	11.5	13.7	15.5	17.4	19.7	a	31 45.21	306 26	"	"	I	46.970	9 31 16.02	14 36 40.34	14 2895
135	9.0	51.3	53.5	55.6	57.7	59.8	c	31 55.58	307 2	10.1	8.1	III	41.690	9 31 26.43	14 2 22.00	13 2893
136	......	5.9	8.0	10.0	12.5	14.5	c	33 10.18	304 50	10.5	8.7	III	39.100	9 32 40.88	16 15 17.43	16 2842
137	9.2	46.1	48.3	50.5	52.6	54.8	c	33 50.46	304 50	"	"	III A	38.740	9 33 21.17	16 12 9.80	16 2844
138	8.9	22.5	24.8	26.8	28.7	30.5	e	33 56.87	304 50	"	"	VII B	47.015	9 33 27.58	16 15 59.80	16 2845
139	8.8	10.1	12.2	14.4	16.6	18.7	c	35 14.40	305 36	10.0	8.1	V B	45.060	9 34 45.17	15 30 35.92	15 2860
140	9.4	53.5	55.6	57.8	0.0	2.0	c	35 57.78	305 36	"	"	V	46.370	9 35 28.56	−15 26 57.30	−15 2864
141	8.5	27.0	29.0	30.8	32.7	35.0	a	38 0.67	305 36	"	"	I	43.740	9 37 31.45	−15 27 47.33	−15 2873
142	8.8	56.5	58.8	0.9	3.0	5.0	c	38 0.84	305 36	"	"	III B	39.290	9 37 31.61	15 32 27.07	15 2874
143	8.8	37.9	40.0	42.1	44.1	45.8	e	38 12.31	305 36	"	"	VII A	44.020	9 37 43.09	15 24 27.91	15 2875
144	9.3	40.0	42.1	44.2	46.5	48.6	c	39 44.28	305 2	9.7	7.7	III	45.130	9 39 15.03	16 1 23.53	15 2885
145	9.3	35.3	37.5	39.6	41.6	43.9	c	40 39.58	305 2	"	"	III B	41.880	9 40 10.33	16 5 39.89	15 2892
146	9.4	56.5	58.7	0.9	3.1	5.1	c	42 0.86	305 2	"	"	III A	40.135	9 41 31.62	15 59 45.19	15 2898
147	8.6	29.3	31.5	33.7	35.9	38.0	c	42 33.68	305 2	"	"	III B	43.770	9 42 4.43	16 5 4.05	15 2900
148	9.1	41.0	43.2	45.4	47.4	49.5	c	43 45.30	306 6	10.0	8.3	III	45.250	9 43 16.13	14 57 18.69	14 2952
149	9.6	15.4	17.6	19.6	22.0	24.0	c	44 19.72	305 10	10.0	7.9	V A	40.700	9 43 50.49	15 51 34.35	15 2905
150	8.9	55.8	57.9	0.0	1.9	3.8	e	44 30.13	305 10	"	"	VII B	38.780	9 44 0.90	15 58 40.07	−15 2907
151	9.1	53.8	56.0	58.0	0.2	2.4	c	45 58.08	306 10	10.0	8.7	III	42.840	9 45 28.91	14 54 5.01	−14 2957
152	......	41.0	43.0	44.9	46.8	49.0	a	47 14.64	306 10	"	"	I B	50.270	9 46 45.48	14 54 56.05	14 2964
153	9.1	30.9	32.9	34.8	36.6	38.9	a	48 4.51	306 10	"	"	I	46.580	9 47 35.35	14 52 53.14	14 2970
154	8.8	20.0	22.3	24.3	26.6	28.7	c	48 24.38	305 10	10.0	8.4	III	40.950	9 47 55.16	15 54 44.77	15 2921
155	9.1	33.2	35.3	37.4	39.7	41.8	c	51 37.48	306 0	10.0	8.3	III	42.440	9 51 8.32	15 4 14.50	14 2980
156	9.1	30.4	32.4	34.2	36.0	38.3	a	53 3.98	306 0	"	"	I	39.210	9 52 34.82	15 5 16.24	14 2984
157	8.9	12.5	14.6	16.8	19.0	21.0	c	53 16.78	306 0	"	"	III	39.655	9 52 47.63	15 5 8.29	14 2986
158	9.0	52.2	54.4	56.5	58.3	0.1	e	53 26.68	306 0	"	"	VII	47.680	9 52 57.53	15 2 34.86	14 2987
159	8.7	54.5	56.6	58.7	1.0	3.0	c	55 58.76	305 2	10.0	8.7	III	45.090	9 55 29.56	16 1 27.06	15 2954
160	8.3	11.0	13.1	14.9	16.7	19.0	a	57 44.58	306 30	10.0	8.5	I	46.870	9 57 15.47	−14 32 48.72	−14 3005

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″	r	h m s	° ′ ″	°
161	8.7	50.0	52.2	54.3	56.5	58.7	c	57 54.34	306 42 10.4	9.2	III C 51.680	9 57 25.23	−14 25 42.62	−14 3007
162	9.1	21.9	24.0	26.0	28.0	29.8	e	57 56.42	306 42 "	"	VII (45).530	9 57 27.32	14 21 14.48	14 3008
163	9.0	39.9	42.0	44.2	46.3	48.5	c	59 44.18	305 54 9.5	7.7	III 43.670	9 59 15.04	15 9 53.32	14 3016
164	9.0	58.0	59.9	1.8	3.6	6.0	a	1 31.48	306 44 10.0	8.8	I 44.890	10 1 2.39	14 19 26.65	14 3025
165	9.1	51.8	53.9	55.7	57.6	59.9	a	2 25.67	304 46 10.0	8.0	I 41.500	10 1 56.49	16 18 37.72	16 2967
166	8.8	55.0	57.3	59.4	1.5	3.6	c	2 59.36	306 (4)10.5	8.9	III A 39.200	10 2 30.25	14 58 3.47	14 3029
167	8.5	43.6	45.8	48.0	50.0	52.0	c	4 47.88	306 (4) "	"	III 43.520	10 4 18.78	14 59 55.59	14 3039
168	9.5	38.4	40.6	42.5	44.3	46.1	e	7 12.82	306 34 10.0	8.5	VII B 41.710	10 6 43.74	14 33 43.94	14 3049
169	8.6	......	6.4	10.7	12.1	14.8	c_5 d_3	8 2.08	306 34 "	"	VI B 39.470	10 7 33.01	14 34 27.08	14 3054
170	9.4	55.6	57.5	59.5	1.5	3.4	e	8 29.96	306 34 "	"	VII A 44.225	10 8 0.90	−14 26 27.20	−14 3056
171	9.3	21.2	23.6	25.4	27.2	29.4	e	9 55.38	303 40 10.0	8.5	V 42.660	10 9 26.17	−17 24 20.81	−17 3094
172	8.9	31.3	33.4	35.4	37.1	39.4	a	12 5.21	304 48 10.0	8.2	I 41.450	10 11 36.07	16 16 40.21	16 3008
173	9.5	13.0	15.0	17.1	19.3	21.4	c	12 17.16	305 42 10.0	8.2	V 42.770	10 11 48.06	15 22 13.26	15 3020
174	9.1	31.9	34.0	35.7	37.8	39.8	a	16 5.72	304 54 10.3	8.9	I B 44.640	10 15 36.60	16 12 52.77	15 3029
175	9.4	8.0	10.2	12.4	14.6	16.7	c	17 12.38	304 54 "	"	III 46.510	10 16 43.26	16 9 3.70	15 3035
176	9.8	35.1	37.5	39.6	41.8	43.9	c	18 39.58	304 44 10.0	8.2	V 42.630	10 18 10.46	16 20 19.75	16 3038
177	9.1	9.9	12.2	14.3	16.6	18.6	c	21 14.32	304 46 10.0	8.4	III A 44.090	10 20 45.22	16 14 36.91	16 3050
178	5.5	39.9	42.2	44.4	46.6	48.6	c	21 44.34	304 46 "	"	V B 48.940	10 21 15.24	16 19 32.63	16 3052
179	9.4	45.4	47.8	49.9	52.0	54.4	c	23 49.90	304 30 10.0	8.1	III 42.350	10 23 20.79	16 34 26.34	16 3064
180	9.2	41.0	43.1	45.3	47.4	49.7	c	25 45.30	306 58 10.0	8.7	III 42.990	10 25 16.31	−14 6 7.08	−13 3135
181	8.7	8.9	11.1	13.3	15.5	17.7	c	27 13.30	306 42 10.0	8.5	III 42.500	10 26 44.30	−14 22 17.52	−14 3134
182	8.9	36.8	39.0	41.2	43.3	45.4	c	28 41.14	306 56 10.0	8.6	III C 43.970	10 28 12.15	14 14 15.56	14 3138
183	9.4	16.0	18.1	20.2	22.3	24.5	c	30 20.22	306 56 "	"	III B 42.890	10 29 51.25	14 11 23.57	13 3159
184	8.9	21.6	23.6	25.7	27.8	29.9	c	32 25.72	306 16 10.3	9.4	III C 46.000	10 31 56.73	14 53 38.38	14 3151
185	......	39.5	41.5	43.9	46.0	48.2	c	35 43.82	305 16 10.0	8.1	V B 44.750	10 35 14.81	15 50 53.70	15 3103
186	9.4	52.2	54.5	56.5	58.3	0.2	e	36 26.69	305 52 10.0	8.9	VII B 43.050	10 35 57.70	15 15 24.40	15 3106
187	8.9	41.0	43.0	45.2	47.2	48.9	e	37 15.42	305 52 "	"	VII A 41.620	10 36 46.44	15 9 23.22	14 3164
188	9.1	33.6	35.7	38.0	40.1	42.2	c	38 37.92	306 48 10.0	9.1	V A 42.325	10 38 8.98	14 13 7.27	13 3201
189	8.9	18.2	20.4	22.6	24.7	26.7	c	39 22.52	306 48 "	"	V 42.950	10 38 53.58	14 16 10.26	14 3169
190	8.6	30.2	32.4	34.4	36.8	38.9	c	41 34.54	304 52 10.0	9.2	III 41.890	10 41 5.54	−16 12 35.92	−15 3123
191	9.0	25.5	27.6	29.7	31.6	33.5	e	46 0.02	306 30 10.0	8.7	VII 42.550	10 45 31.10	−14 34 19.92	−14 3199
192	9.4	29.9	32.2	34.3	36.5	38.5	c	51 34.28	306 40 10.0	9.0	III C 44.790	10 51 5.38	14 30 3.10	14 3226
193	8.6	16.4	18.5	20.6	22.8	25.0	c	52 20.66	306 40 "	"	V A 39.950	10 51 51.77	14 21 54.78	14 3230
194	......	45.3	47.4	49.3	51.7	53.6	c	54 49.46	304 36 10.0	8.3	III C 43.520	10 54 20.52	16 34 34.12	16 3162
195	......	21.2	23.5	25.7	27.8	29.9	c	55 25.62	306 10 10.0	8.3	V 44.860	10 54 56.73	14 53 37.52	14 3237
196	......	28.1	30.3	32.4	36.7	38.5	c_3 d_2	56 28.18	305 54 10.0	8.1	....	10 55 59.29	15 15 16	15 3178
197	......	32.7	35.0	37.0	39.3	41.4	c	57 37.08	305 54 "	"	V 46.170	10 57 8.19	15 9 13.39	14 3245
198	......	0.5	2.8	4.8	6.8	9.0	c	2 4.78	306 56 10.0	8.5	V B 40.540	11 1 35.95	14 12 12.44	13 3300
199	......	15.4	17.7	19.9	21.9	24.1	c	3 19.80	306 56 "	"	III A 40.740	11 2 50.98	14 5 40.00	13 3308
200	......	55.1	57.3	59.5	1.6	3.9	c	3 59.48	303 34 10.0	8.1	V B 40.600	11 3 30.58	−17 34 21.57	−17 3307
201	......	1.7	3.9	5.9	8.3	10.5	c	6 6.06	305 10 10.0	8.1	III 41.710	11 5 37.21	−15 54 42.99	−15 3216

Reduction Elements. Zone 104.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 29.3....	+0.096	+0.056	+0.071	+0.082	−0.069	+0.071
29.5....	+0.067	+0.082				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		θ Canis Majoris		Piazzi VI. 303		γ Canis Majoris		29 Canis Majoris		λ Hydrae		φ Hydrae	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		309 8 10.20		295 46 9.75		305 34 9.65		296 40 9.75		309 12 9.70		304 42 9.50	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	43.470	5 7.21		6 1.04	43.125	5 1.00	46.835	6 11.65	44.160	5 20.44	45.460	5 45.06
II	Red. to Mer......	.480	0.11		0.25	.175	0.14	.870	0.24	.190	0.11	.430	0.15
VI	Inclination	.530		46.300	−0.45	.205		.860		.220		.525	
VII	Refraction.......	.540	1 10.6	.325	1 58.5	.220	1 20.4	.895	1 54.2	.210	1 11.2	.495	1 23.8

		b^2 Hydrae		β Crateris	
		° ′ ″		° ′ ″	
CIRCLE READING.		301 28 9.00		298 48 9.35	
		r	′ ″	r	′ ″
I	Microm. Eq......	44.325	5 23.92		4 48.94
II	Red. to Mer......	.385	0.19	42.540	0.19
VI	Inclination	.395		.555	−0.18
VII	Refraction	.400	1 34.8	.560	1 45.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ϑ Canis Majoris	6 50 1.53	11	+0.18	−42.20	309 12 6.9	36.7
51 H. Cephei..........	6 52 9.50	4	+1.54	[−42.17]	48 16 ...	....
Piazzi VI. 303	6 55 0.43	11	+0.20	−42.17	295 50 12.1	37.8
γ Canis Majoris.....	6 59 43.29	11	+0.19	−42.16	305 37 50.4	37.3
29 Canis Majoris.....	7 15 0.88	11	+0.19	−42.19	296 44 27.4	37.3
λ Hydrae...........	10 6 11.76	11	+0.18	−42.07	309 16 19.0	36.3
φ Hydrae...........	10 34 11.62	11	+0.19	−42.11	304 46 30.9	36.6
b² Hydrae...........	10 49 5.01	11	+0.19	−42.15	301 31 58.3	35.8
β Crateris...........	11 7 13.31	11	+0.19	−42.08	298 51 12.8	35.8

h 7.000	*dt*....................		s −42.180
	Hourly rate		+ 0.0214
			° ′ ″
	Adopted Equator Point.........		321 6 36.70

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 49	29.706	52.0	50.7
7 55	29.664	47.8	46.2
8 57	29.630	45.5	44.1
10 13	29.589	44.4	43.3
11 21	29.558	43.8	42.3

Notes.

Piazzi VI. 303. Faint through clouds.

16 Sky thick.

32. Sky hazy.

57. Difficult.

λ Hydrae. Image bad; unsteady.

Magnitudes of little value on account of haze all night.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			303°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	s
303	+0.189	7 0	......	+12.553	+12.666	+12.778	+12.891	+13.000
304	0.188	7 30	+12.381	12.491	12.598	12.704	12.809	12.913
305	0.187	8 0	12.361	12.462	12.561	12.661	12.759	......
306	0.186	8 30	12.375	12.468	12.558	12.647	12.736	......
307	0.186	9 0	12.426	12.507	12.587	12.666	12.744	......
308	+0.185	9 30	12.512	12.581	12.648	12.716	12.782	12.846
		10 0	12.632	12.688	12.742	12.796	12.849	12.902
		10 30	12.784	12.825	12.865	12.904	12.944	12.981
		11 0	12.964	12.990	13.016	13.041	13.066	13.089
		11 30	+13.171	+13.182	+13.192	+13.202	+13.210	+13.220

APPARENT RIGHT ASCENSION.	$D =$ Z. D. N. to 1895.0						R					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
7 0	....	+ 5.45	+ 5.18	+ 4.90	+ 4.62	+ 4.34	88.72	85.45	82.32	79.36	76.52	75.14
7 30	+ 6.70	6.44	6.17	5.90	5.63	5.35	89.02	85.74	82.60	79.63	76.79	75.40
8 0	7.71	7.45	7.20	6.94	6.67	....	89.29	86.00	82.85	79.87	77.02	75.63
8 30	8.72	8.48	8.25	8.00	7.76	....	89.43	86.14	82.98	80.00	77.14	75.75
9 0	9.70	9.49	9.27	9.05	8.83	....	89.56	86.26	83.10	80.11	77.25	75.86
9 30	10.66	10.47	10.27	10.08	9.88	9.68	89.58	86.28	83.12	80.13	77.27	75.88
10 0	11.54	11.39	11.22	11.05	10.89	10.72	89.60	86.30	83.14	80.15	77.29	75.89
10 30	12.38	11.26	12.13	12.00	11.86	11.73	89.64	86.34	83.18	80.19	77.32	75.93
11 0	13.14	13.05	12.95	12.86	12.77	12.66	89.66	86.36	83.20	80.20	77.34	75.94
11 30	+13.79	+13.74	+13.69	+13.62	+13.57	+13.51	89.68	86.38	83.21	80.22	77.36	75.96

1895 APRIL 4. ZONE 105. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	......	34.3	36.5	38.6	40.7	42.8	c	29 38.58	306 10	10.0	8.8	V B	43.360	7 29 7.02	14 56 26.80	−14 1970
2	......	31.2	33.1	35.0	36.9	39.2	a	32 4.68	306 50	10.0	8.4	I A	39.555	7 31 33.20	14 11 10.22	14 2002
3	......	32.4	34.6	36.7	38.9	41.0	c	32 36.72	306 50	"	"	III	43.270	7 32 5.23	14 13 14.11	14 2025
4	......	28.2	30.3	32.6	34.7	36.9	c	33 32.54	306 50	"	"	V	47.455	7 33 1.05	14 11 54.49	14 2052
5	......	0.6	2.8	4.5	6.3	8.7	a	33 34.18	306 50	"	"	I	44.230	7 33 2.69	14 12 55.49	14 2053
6	......	47.9	50.2	51.8	53.6	56.0	a	35 21.70	305 28	9.5	8.0	I C	46.785	7 34 50.05	15 40 38.37	15 1962
7	......	37.4	39.7	41.8	44.0	46.1	c	35 41.80	305 28	"	"	III	41.475	7 35 10.16	15 35 53.68	15 1966
8	......	23.8	25.9	28.0	30.3	32.4	c	37 28.08	305 28	"	"	V B	44.290	7 36 56.43	15 38 14.34	15 1978
9	8.6	13.3	15.5	17.6	19.8	21.9	c	38 17.62	305 28	"	"	V A	39.475	7 37 45.98	15 33 18.48	15 1986
10	9.3	50.5	52.7	54.6	56.6	58.4	e	38 24.86	305 28	"	"	VII	(48).850	7 37 53.22	[−15 33 33.69]	−15 1990

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	c
11	9.1	9.8	12.0	14.1	18.4	20.0	$c_3 d_2$	40 9.82	305 2	10.0	8.5	V	48.635	7 39 38.13	−15 59 38.95	15 2008
12	......	20.5	22.7	24.7	26.7	28.4	e	40 54.92	305 32	9.7	7.9	V A	45.640	7 40 23.29	15 27 20.89	15 2015
13	8.9	52.7	54.8	56.8	59.0	1.1	c	41 56.88	305 32	“	“	III C	46.620	7 41 25.23	15 36 42.75	15 2028
14	9.0	38.6	40.9	42.9	44.8	46.7	e	42 13.09	305 32	“	“	V	45.860	7 41 41.45	15 30 32.08	15 2031
15	9.7	36.9	38.9	40.8	42.6	44.9	a	46 10.57	305 50	10.0	8.1	III B	41.730	7 45 38.95	15 17 5.14	15 2077
16	8.9	21.2	23.4	25.5	27.8	29.8	c	46 25.54	305 50	“	“	V (B)	41.360	7 45 53.92	15 17 12.55	15 2080
17	......	20.1	22.3	24.4	26.7	28.8	c	47 24.46	305 50	“	“	V A	40.120	7 46 52.84	15 11 8.12	15 2092
18	8.6	52.5	54.5	56.5	58.0	0.5	a	48 26.13	305 50	“	“	I A	38.520	7 47 54.51	15 11 38.75	15 2101
19	8.0	30.2	32.6	34.7	36.8	38.7	c	48 34.60	305 50	“	“	III A	43.080	7 48 2.98	15 10 11.60	15 2102
20	8.2	50.7	52.8	54.9	59.0	0.8	$c_3 d_2$	48 50.62	305 50	“	“	V	45.215	7 48 19.00	−15 12 45.79	−15 2105
21	8.9	34.5	36.7	38.6	40.7	42.5	e	49 8.96	305 50	“	“	V	48.890	7 48 37.34	−15 11 35.36	−15 2108
22	......	5.7	7.9	9.9	12.2	14.2	c	52 9.98	305 16	9.7	7.7	III	51.780	7 51 38.30	15 44 42.50	15 214
23	......	33.6	35.9	37.9	40.2	42.4	c	52 38.00	305 16	“	“	....	....	7 52 6.31	15 50 54	15 214
24	......	2.2	4.2	6.6	8.7	10.9	c	53 6.52	305 16	“	“	V	47.410	7 52 34.84	15 46 7.04	15 214
25	......	3.0	5.3	7.3	9.2	11.0	e	53 37.43	305 16	“	“	V (B)	46.420	7 53 5.74	15 49 38.89	15 2153
26	9.1	40.3	42.5	44.3	46.3	48.5	a	56 14.46	303 26	10.0	7.7	I A	44.070	7 55 42.59	17 34 1.99	17 2273
27	8.5	17.0	19.2	21.4	23.5	25.8	c	56 21.38	303 26	“	“	III C	43.970	7 55 49.50	17 43 45.72	17 2274
28	8.6	57.2	59.3	1.4	3.4	5.2	e	56 31.28	303 26	“	“	V B	47.820	7 55 59.40	17 39 19.17	17 2276
29	8.6	23.7	25.8	27.7	29.6	31.9	a	59 57.50	305 38	10.0	7.5	I	49.330	7 59 25.84	15 23 30.66	15 2233
30	......	53.6	55.6	57.6	59.5	1.6	a	0 27.36	305 38	“	“	I C	47.120	7 59 55.68	−15 30 40.49	−15 2237
31	8.8	37.7	40.0	41.7	43.6	45.9	a	1 11.69	304 38	10.5	8.2	III A	42.740	8 0 39.93	−16 22 25.57	−16 2279
32	9.3	24.2	26.2	28.1	30.0	32.2	a	1 58.06	304 38	“	“	III B	43.240	8 1 26.29	16 28 44.74	16 2285
33	9.3	59.1	1.2	3.4	7.6	9.3	$c_3 d_2$	1 59.06	304 38	“	“	V C	44.590	8 1 27.28	16 31 31.61	16 2286
34	8.9	38.2	40.2	42.2	44.1	46.0	e	2 12.31	304 38	“	“	VII C	45.400	8 1 40.53	16 31 15.77	16 2287
35	8.8	33.6	35.7	38.0	40.0	42.1	c	3 37.88	303 44	10.0	7.7	V	46.630	8 3 6.03	17 18 29.94	17 234
36	8.7	48.1	50.4	52.6	54.8	56.8	c	4 52.54	305 24	10.0	8.2	III B	48.200	8 4 20.84	15 41 8.64	15 227
37	9.1	36.1	38.4	40.4	42.7	44.8	c	5 40.48	305 24	“	“	III C	49.065	8 5 8.78	15 44 5.28	15 228
38	9.1	50.5	52.7	54.8	57.0	59.0	c	6 54.80	305 24	“	“	III	50.740	8 6 23.11	15 37 6.80	15 2297
39	9.4	44.2	46.3	48.3	50.6	52.7	c	7 48.42	305 24	“	“	V	43.750	8 7 16.72	15 39 21.62	15 230
40	9.1	23.0	25.2	27.3	29.5	31.6	c	8 27.32	305 24	“	“	V	42.235	8 7 55.62	−15 39 50.92	−15 2315
41	8.6	31.1	33.2	35.6	37.7	......	c	9 35.48	304 10	10.5	8.3	III A	46.275	8 9 3.67	−16 49 21.89	−16 2352
42	8.7	45.1	47.3	49.3	51.6	53.7	c	9 49.40	304 10	“	“	V	49.530	8 9 17.59	16 51 34.57	16 2353
43	8.2	50.4	52.7	54.8	57.0	59.0	c	10 54.78	304 10	“	“	III C	48.400	8 10 22.95	16 58 23.01	16 2363
44	8.8	17.6	19.8	21.9	24.2	26.3	c	11 21.96	304 42	10.0	8.1	V	47.290	8 10 50.20	16 20 16.91	16 236
45	8.6	31.7	33.8	36.0	38.2	40.4	c	12 36.05	304 42	“	“	III	48.295	8 12 4.29	16 19 57.67	16 2376
46	8.0	25.7	27.9	30.0	32.3	34.4	c	14 30.06	306 46	10.4	8.3	III	50.250	8 13 58.49	14 15 14.94	14 246
47	8.6	52.2	54.4	56.5	58.7	0.8	c	15 56.52	306 46	“	“	III	41.770	8 15 24.94	14 17 58.16	14 247
48	......	10.7	12.8	14.9	17.3	19.4	c	17 15.02	306 6	10.0	7.9	III	47.560	8 16 43.38	14 56 9.60	14 248
49	8.9	31.1	33.2	35.5	37.7	39.9	c	17 35.48	304 34	9.6	7.6	V A	43.130	8 17 3.71	16 26 24.74	16 241
50	9.3	40.9	43.1	45.2	47.4	49.6	(c)	18 45.24	304 34	“	“	III A	45.790	8 18 13.47	−16 25 33.93	−16 2417
51	9.2	0.4	2.5	4.6	6.9	9.0	c	20 4.68	304 34	“	“	III B	41.730	8 19 32.89	−16 33 20.79	−16 242
52	9.3	55.7	57.9	59.9	2.1	4.4	c	21 0.00	304 34	“	“	V A	39.995	8 20 28.22	16 27 26.03	16 243
53	8.5	15.8	18.0	19.8	21.7	24.0	a	23 49.79	304 34	“	“	I B	43.930	8 23 18.01	16 32 39.34	16 2457
54	8.9	12.1	14.3	16.5	18.7	20.6	c	24 16.44	304 38	10.0	7.8	III A	40.310	8 23 44.67	16 23 20.43	16 2461
55	9.0	55.2	57.4	59.1	1.2	3.4	a	25 29.18	304 38	“	“	I B	45.460	8 24 57.40	16 28 10.00	16 247
56	8.6	21.5	23.8	25.5	27.3	29.7	a	25 55.46	304 38	“	“	III A	41.835	8 25 23.69	16 22 51.67	16 247
57	8.5	4.0	6.2	8.3	10.6	12.6	c	26 8.34	304 38	“	“	III B	40.840	8 25 36.56	16 29 39.32	16 248
58	8.2	52.2	54.4	56.5	58.7	0.9	c	26 56.54	306 12	10.0	7.5	III	45.450	8 26 24.91	14 50 53.28	14 255
59	9.3	22.1	24.4	26.4	28.6	30.8	c	28 26.46	304 36	10.0	7.6	III	44.170	8 27 54.68	16 27 23.07	16 249
60	8.7	44.8	46.9	49.1	51.3	53.5	c	28 49.12	305 18	9.3	6.8	V	45.320	8 28 17.41	−15 44 59.75	−15 248
61	7.7	23.6	25.9	28.0	30.2	32.4	c	29 28.02	305 18	“	“	III	41.810	8 28 56.31	−15 46 6.98	−15 249
62	8.9	38.7	41.0	43.1	45.4	47.5	c	32 43.14	305 56	10.0	7.9	III	42.780	8 32 11.48	15 7 46.75	14 258
63	8.6	41.6	43.8	45.8	48.1	50.3	c	33 45.92	305 56	“	“	III C	49.500	8 33 14.25	15 12 4.85	15 252
64	8.7	30.4	32.6	34.6	36.7	38.9	c	34 34.64	306 44	10.3	8.9	III B	44.660	8 34 3.05	14 22 22.28	14 259
65	8.4	42.7	44.9	47.0	49.1	51.3	c	34 47.00	306 44	“	“	V	44.080	8 34 15.41	14 19 20.09	14 259
66	8.5	41.6	43.6	45.5	47.4	49.6	a	36 15.16	306 44	“	“	I B	50.285	8 35 43.57	14 20 34.46	14 2611
67	9.2	17.0	19.1	21.2	23.4	25.6	c	36 21.26	306 44	“	“	III	48.635	8 35 49.67	14 17 52.78	14 261
68	......	42.4	44.5	46.6	51.0	52.8	$c_3 d_2$	36 42.42	305 10	9.2	6.5	V C	48.185	8 36 10.69	15 58 34.02	15 254
69	8.8	25.8	27.8	29.8	31.7	33.6	e	37 0.01	305 10	“	“	VII A	40.890	8 36 28.29	15 51 12.93	15 255
70	9.4	58.0	0.2	2.3	4.5	6.5	c	41 2.30	305 22	10.0	7.5	III	44.700	8 40 30.59	−15 41 14.20	−15 257
71	9.3	42.0	44.3	46.2	48.1	50.4	a	44 16.09	304 46	10.0	7.3	I	41.080	8 43 44.32	−16 18 25.88	−16 259
72	9.4	12.4	14.4	16.4	18.7	20.9	c	44 16.56	304 46	“	“	III	41.160	8 43 44.79	16 18 24.90	16 259
73	9.1	35.8	38.0	40.3	42.6	44.7	c	45 40.28	303 10	10.0	7.2	III A	42.780	8 45 8.38	17 50 44.34	17 266
74	9.1	39.3	41.4	43.5	45.9	48.0	c	46 43.62	303 10	“	“	III C	42.745	8 46 11.71	18 0 26.80	17 266
75	9.0	54.4	56.6	58.8	0.9	3.1	c	46 58.76	303 10	“	“	V C	48.170	8 46 26.85	17 58 42.59	17 267
76	8.8	22.0	24.2	26.3	28.6	30.6	c	48 26.34	303 10	“	“	V C	(49).780	8 47 54.44	17 58 12.13	17 267
77	9.2	16.4	18.6	20.5	22.5	24.3	e	48 50.38	303 10	“	“	V C	45.400	8 48 18.47	17 59 36.30	17 267
78	7.5	45.8	47.8	49.9	52.3	54.4	c	50 50.04	305 40	10.0	7.2	III	42.340	8 50 18.35	15 24 1.75	15 263
79	8.8	5.0	7.1	9.3	11.5	13.6	c	52 9.30	305 40	“	“	III	46.780	8 51 37.62	15 22 36.92	15 264
80	8.7	4.1	6.4	8.5	10.6	12.8	c	54 8.48	304 56	10.0	7.8	III	44.420	8 53 36.74	−16 7 24.52	15 265
81	8.0	2.2	4.5	6.5	8.7	11.0	c	55 6.58	304 56	“	“	III	46.140	8 54 34.84	−16 6 51.77	−15 265
82	8.2	4.0	6.1	8.2	10.5	12.6	c	56 8.28	306 38	10.0	7.6	III	43.740	8 55 36.67	14 25 33.66	14 272
83	9.4	37.8	39.7	41.6	43.5	45.8	a	57 11.32	306 38	“	“	III B	42.035	8 56 39.71	−14 29 20.46	−14 272

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
84	8.3	20.5	22.7	24.8	27.1	29.1	c	57 24.84	306 16 10.0 7.6	V 45.185	8 56 53.21	14 47 7.61	—14 2729
85	9.4	6.2	8.3	10.4	12.6	14.9	c	58 10.48	306 16 " "	V 41.670	8 57 38.85	14 48 15.26	14 2730
86	8.9	29.4	31.6	33.5	35.5	37.4	e	59 3.89	306 16 " "	V B 42.350	8 58 32.25	14 51 16.33	14 2733
87	8.9	56.4	58.7	0.8	2.9	5.0	c	0 0.76	306 16 " "	III 41.070	8 59 29.13	14 48 26.93	14 2737
88	8.7	37.9	40.1	42.1	44.0	45.8	e	0 12.29	305 32 10.0 7.4	V 45.820	8 59 40.60	15 30 58.26	15 2685
89	8.9	57.9	0.2	2.1	4.1	6.0	e	3 31.93	302 46 10.0 7.2	VII 42.870	9 3 0.03	18 18 4.26	18 2578
90	9.0	30.4	32.6	34.7	36.8	38.9	c	4 34.68	305 58 10.4 8.0	V 45.380	9 4 3.03	—15 5 6.22	—14 2759
91	9.1	8.5	10.7	12.8	15.0	17.1	c	5 12.82	305 58 " "	III C 47.070	9 4 41.16	—15 11 0.34	—15 2714
92	9.3	42.8	45.0	47.2	49.5	51.6	c	5 47.22	305 58 " "	III B 47.680	9 5 15.57	15 7 35.84	14 2765
93	8.7	39.9	42.1	44.3	46.5	48.6	(c)	6 44.28	305 58 " "	III A 41.490	9 6 12.63	15 3 6.42	14 2772
94	9.0	48.4	50.6	52.7	54.9	57.1	c	7 52.74	305 20 10.0 7.2	III 42.420	9 7 21.04	15 44 5.91	15 2728
95	9.0	26.5	28.8	30.9	33.0	35.2	c	8 30.88	305 46 10.0 7.3	III 44.700	9 7 59.22	15 17 21.06	15 2729
96	9.2	46.7	48.7	50.9	53.1	55.4	c	8 50.96	305 46 " "	V 47.750	9 8 19.30	15 16 22.98	15 2731
97	9.2	40.2	42.4	44.5	46.7	48.7	c	9 44.50	305 46 " "	III B 47.700	9 9 12.84	15 19 37.62	15 2737
98	8.6	23.8	26.0	28.1	30.3	32.5	c	10 28.14	306(36) 10.0 7.8	III C 50.420	9 9 56.54	14 31 56.11	14 2789
99	9.1	42.7	44.9	49.0	50.7	53.3	c_4 d_3	10 40.56	306(36) " "	VI 46.270	9 10 8.96	14 26 49.56	14 2790
100	9.1	55.7	57.8	59.8	1.9	3.6	e	11 29.67	303 0 9.5 6.8	V 46.330	9 10 57.80	—18 2 59.58	—17 2801
101	9.4	43.0	45.4	47.5	49.4	51.0	e	12 17.53	305 14 10.0 7.6	V (A) 40.470	[9 11 45.83]	—15 47 30.00	—15 2749
102	8.9	5.3	7.5	9.6	12.0	14.0	c	13 9.68	305 14 " "	V B 40.410	9 12 37.98	15 53 59.98	15 2752
103	8.8	......	......	......	......	......	......	......	304 16 10.0 7.7	III 45.550	9 13 58	16 47 10.40	16 2744
104	8.7	57.4	59.5	1.6	3.8	5.9	c	15 1.64	304 16 " "	III A 39.430	9 14 29.88	16 45 53.28	16 2751
105	8.0	15.2	17.2	19.3	21.5	23.6	c	18 19.36	306 14 10.0 7.4	III 47.610	9 17 47.74	14 48 26.51	14 2835
106	8.4	15.7	17.7	19.8	22.0	24.3	c	19 19.90	305 40 10.0 7.2	III 47.810	9 18 48.24	15 22 24.55	15 2778
107	9.1	20.3	22.6	24.7	27.0	29.0	c	24 24.72	305 16 9.5 6.4	III C 41.290	9 23 53.03	15 54 59.46	15 2810
108	9.0	40.5	42.7	44.8	49.0	50.7	c_3 d_2	24 40.51	305 16 " "	V A 41.910	9 24 8.82	15 45 6.30	15 2811
109	9.4	30.6	32.7	34.7	36.6	38.5	e	25 4.77	304 28 10.0 7.4	VII 40.700	9 24 33.03	16 36 46.27	16 2800
110	9.1	41.6	43.7	45.9	48.0	50.4	c	27 45.92	304 42 10.0 7.6	III 43.200	9 27 14.20	—16 21 57.64	—16 2813
111	9.1	54.5	56.7	58.9	1.1	3.2	c	27 58.88	304 42 " "	V B 39.910	9 27 27.16	—16 26 14.87	—16 2814
112	9.2	28.5	30.6	32.7	35.0	37.2	c	29 32.80	304 42 " "	III A 38.460	9 29 1.09	16 20 14.36	16 2828
113	8.8	6.5	8.9	11.0	13.2	15.5	c	35 11.02	303 12 10.0 7.1	V 44.670	9 34 39.22	17 51 36.33	17 2922
114	9.0	37.5	39.6	41.7	44.1	46.1	c	37 41.80	306 4 10.0 7.0	III 46.320	9 37 10.19	14 58 56.58	14 2921
115	9.1	0.7	2.7	4.6	6.6	8.7	a	40 34.59	304 36 9.4 6.5	I C 46.760	9 40 2.89	16 33 20.18	16 2877
116	9.1	31.4	33.6	35.8	38.0	40.0	c	40 35.76	304 36 " "	III A 48.190	9 40 4.07	16 23 11.31	16 2878
117	9.3	53.6	55.8	57.8	2.1	3.9	c_3 d_2	40 53.58	304 36 " "	V B 44.680	9 40 21.88	16 30 47.49	16 2880
118	9.4	15.6	17.7	19.5	21.3	23.5	a	43 49.26	305 48 10.0 7.0	I 42.320	9 43 17.65	15 16 14.89	15 2901
119	9.3	20.9	23.1	25.3	27.5	29.6	c	44 25.28	304 38 10.3 7.8	III 40.730	9 43 53.60	16 26 48.83	16 2891
120	9.1	31.3	33.4	35.5	37.8	39.9	c	44 35.58	304 38 " "	V 46.990	9 44 3.90	—16 24 49.09	—16 2892
121	8.6	6.5	8.6	10.8	13.0	15.2	c	47 10.82	304 58 10.0 7.3	III 45.120	9 46 39.17	—16 5 24.58	—15 2918
122	7.8	40.5	42.7	44.8	47.0	49.1	c	47 44.82	304 58 " "	III 50.040	9 47 13.17	16 3 50.29	15 2920
123	9.3	28.7	30.9	32.9	35.2	37.5	c	48 33.04	303 12 10.7 8.2	III 43.660	9 48 1.28	17 51 57.43	17 2992
124	9.4	15.0	17.1	19.3	21.4	23.7	c	52 19.30	305 38 10.0 7.1	V 48.780	9 51 47.70	15 24 14.00	15 2936
125	9.4	3.1	5.3	7.3	9.1	11.1	e	52 37.50	305 38 " "	VII 43.660	9 52 5.90	15 25 52.48	15 2937
126	8.5	37.1	39.5	41.8	43.8	45.9	c	52 41.62	305 38 " "	V 46.180	9 52 10.02	15 25 3.97	15 2938
127	9.3	20.9	22.9	24.9	26.8	28.6	e	52 55.15	305 38 " "	VII 48.140	9 52 23.55	15 24 26.56	15 2939
128	9.3	14.3	16.7	18.8	20.6	22.4	e	53 48.88	305 38 " "	VII B 46.230	9 53 17.28	15 28 16.98	15 2944
129	9.4	35.3	37.5	39.6	41.5	43.4	e	54 9.79	305 38 " "	VII 44.590	9 53 38.19	15 25 34.96	15 2947
130	8.4	18.0	20.2	22.3	24.2	26.0	e	54 52.45	305 38 " "	VII C 44.630	9 54 20.85	15 32 0.01	15 2949
31	9.3	32.3	34.4	36.6	38.7	40.9	c	56 36.58	305 38 " "	III 42.190	9 56 4.99	—15 26 20.98	—15 2958
32	8.8	8.8	10.9	13.0	15.3	17.4	c	58 13.08	305 38 " "	III C 44.570	9 57 41.49	15 32 2.37	15 2966
33	9.0	55.4	57.6	59.7	2.0	4.1	c	58 59.76	303 4 9.2 6.2	III 41.680	9 58 28.03	18 0 39.77	17 3042
34	9.3	38.4	40.5	42.7	44.9	47.0	c	59 42.70	303 4 " "	III 41.750	9 59 10.97	18 0 38.55	17 3045
35	8.6	50.8	53.0	55.1	57.5	59.6	c	0 55.20	304 32 9.8 7.4	III A 45.700	10 0 23.56	16 28 2.87	16 2957
36	9.4	13.3	15.5	17.5	19.8	22.0	c	2 17.62	304 32 " "	III 43.480	10 1 45.99	16 32 0.45	16 2965
37	6.5	49.0	51.3	53.4	55.6	57.7	c	2 53.40	304 32 " "	III C 41.375	10 2 21.76	16 39 7.72	16 2974
38	9.0	1.8	4.0	6.1	8.5	10.6	c	4 6.20	303 8 10.0 7.0	III 44.290	10 3 34.50	17 55 49.64	17 3068
39	9.1	20.0	22.3	24.3	26.3	28.6	c	4 24.30	303 8 " "	V C 48.805	10 3 52.59	18 0 49.65	17 3070
40	9.5	11.4	13.5	15.6	17.9	19.8	c	6 15.64	304 44 10.0 7.3	III 50.970	10 5 44.03	—16 17 36.79	16 2986
41	8.3	36.0	38.3	40.5	42.7	44.7	c	6 40.44	304 44 " "	V C 43.950	10 6 8.83	—16 26 18.18	16 2987
42	9.8	40.7	42.8	44.9	47.4	49.6	c	7 45.08	304 44 " "	V C 42.440	10 7 13.47	16 26 47.35	16 2992
43	8.8	37.1	39.4	41.4	43.3	45.1	e	8 11.60	305 40 10.0 7.7	V 44.260	10 7 40.03	15 23 43.88	15 3003
44	9.1	30.6	32.8	35.0	39.3	40.8	c_3 d_2	9 30.69	306 18 10.0 7.2	V 42.100	10 8 59.16	14 46 23.58	14 3061
45	8.9	18.0	20.1	21.9	23.9	26.2	a	11 52.23	302 52 10.0 7.4	I 40.540	10 11 20.53	18 13 3.11	17 3103
46	9.0	3.9	6.1	8.1	10.5	12.5	c	16 8.22	304 50 10.0 7.2	III 47.075	10 15 36.64	16 12 53.02	15 3029
47	9.2	57.5	59.5	1.7	3.9	6.1	c	17 1.74	304 32 10.0 7.1	III B 50.830	10 16 30.15	16 32 55.87	16 3030
48	neb.	24.5	26.9	29.0	31.0	33.1	c	20 28.90	302 56 10.0 7.0	V 43.320	10 19 57.25	18 8 12.10	17 3140
49	9.3	14.8	16.7	19.0	21.0	23.3	c	21 18.96	305 44 10.0 7.0	V B 43.770	10 20 47.44	15 23 8.83	15 3054
50	9.3	7.5	9.6	11.7	14.0	16.1	c	22 11.78	305 44 " "	III A 40.480	10 21 40.26	—15 17 43.36	15 3059
51	8.7	25.5	27.6	29.8	32.0	34.0	c	23 29.78	305 44 " "	III B 39.700	10 22 58.26	—15 24 27.00	—15 3062
52	9.4	45.1	47.2	49.4	51.7	53.8	c	24 49.44	305 48 10.0 7.6	III 44.540	10 24 17.93	15 15 40.05	15 3067
53	9.2	55.0	57.4	59.5	1.7	3.8	c	25 59.48	303 44 10.0 7.4	III 40.630	10 25 27.89	17 21 1.52	17 3164
54	9.3	38.8	41.0	43.2	45.3	47.5	c	27 43.16	303 44 " "	III 41.550	10 27 11.58	17 20 44.10	17 3171
55	9.4	38.7	40.9	42.9	45.1	47.4	c	28 43.00	305 44 10.0 7.2	III A 39.120	10 28 11.50	—15 18 10.35	—15 3077

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
156	9.6	22.7	24.9	27.2	29.2	31.3	c	29 27.06	305 44	10.0	7.2	V	43.815	10 28 55.57	−15 19 55.41	−15 3078
157	9.4	23.5	25.7	27.9	30.0	32.1	c	30 27.84	305 44	"	"	III C	46.980	10 29 56.35	15 25 21.19	15 3080
158	9.2	54.4	56.6	58.6	1.0	3.1	c	30 58.74	305 20	9.5	6.5	V	45.510	10 30 27.24	15 43 24.83	15 3082
159	7.5	51.0	53.0	55.2	57.5	59.5	c	31 55.24	305 20	"	"	III C	46.340	10 31 23.74	15 49 35.40	15 3087
160	9.1	23.7	25.9	28.0	29.9	31.7	e	31 58.13	305 20	"	"	VII A	42.960	10 31 26.63	−15 40 58.91	−15 3088
161	9.5	5.5	7.7	9.8	12.0	14.1	c	33 9.82	305 48	10.0	7.5	III B	39.040	10 32 38.34	−15 20 40.63	15 3093
162	8.8	23.5	25.6	27.7	29.9	32.0	c	34 27.74	305 48	"	"	III A	44.010	10 33 56.27	15 12 36.92	14 3156
163	9.1	32.4	34.6	36.6	39.0	41.1	c	35 36.74	305 16	10.0	7.2	III	42.715	10 35 5.25	15 48 18.30	15 3101
164	9.3	20.0	22.1	24.4	26.5	28.7	c	36 24.34	306 6	10.0	7.2	V	44.320	10 35 52.88	14 57 45.59	14 3160
165	8.7	41.4	43.4	45.6	47.7	49.9	c	37 45.60	305 30	9.7	6.6	III	43.250	10 37 14.13	15 34 8.06	15 3111
166	9.5	54.1	56.4	58.4	0.7	2.8	c	38 58.48	305 30	"	"	III C	49.490	10 38 27.01	15 38 35.21	15 3115
167	9.1	41.3	43.5	45.6	47.8	49.8	c	39 45.60	306 24	10.3	7.8	III	45.440	10 39 14.17	14 39 22.85	14 3170
168	9.0	55.9	58.1	59.9	1.8	4.2	a	41 29.92	304 30	10.0	6.9	I	42.245	10 40 58.43	16 34 29.87	16 3122
169	8.5	1.0	3.1	4.9	6.8	9.1	a	42 34.71	305 58	10.0	6.9	I C	44.040	10 42 3.27	15 12 18.58	14 3181
170	9.3	19.8	22.0	24.0	25.9	28.1	a	42 53.68	305 58	"	"	I	46.345	10 42 22.25	−15 5 7.12	−14 3182
171	8.6	8.9	11.1	13.1	15.4	17.5	c	43 13.20	305 58	"	"	III	43.890	10 42 41.77	−15 5 54.81	−14 3184
172	9.1	39.1	41.3	43.3	45.3	47.0	e	43 13.57	305 58	"	"	VII	45.550	10 42 42.14	15 5 23.50	14 3187
173	9.4	44.7	47.0	49.1	51.3	53.6	c	44 49.14	303 4	9.6	6.5	III	46.380	10 44 17.62	17 59 16.34	17 3239
174	......	38.7	40.8	42.8	44.6	46.3	e	45 12.93	305 24	10.2	7.7	VII	42.960	10 44 41.49	15 40 14.50	15 3138
175	9.3	27.7	29.7	34.0	35.9	38.4	c_4 d_3	46 25.53	304 58	10.0	7.4	VI	45.650	10 45 54.08	16 5 24.86	15 3140
176	9.1	17.3	19.3	23.5	25.4	27.9	c_4 d_3	47 15.09	305 46	10.0	6.9	VI B	50.800	10 46 43.67	−15 18 57.28	−15 3145

Reduction Elements. Zone 105.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 4.3....	−0.050	+0.098	+0.162	−0.038	0.094	+0.191
4.4....	−0.026	+0.089	+0.220			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		γ Canis Majoris		29 Canis Majoris		Piazzi VII. 85		Piazzi VII. 116		κ Hydrae		Lalande 19433	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	305 34 9.75		296 40 10.25		312 14 9.75		309 42 9.35		307 10 8.25		302 32 9.20	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	43.115	5 0.10	46.780	6 10.42	48.075	6 37.13	42.700	4 52.06		6 11.94	43.255	5 2.64
II	Red. to Mer......	.120	0.15	.785	0.24	.070	0.09	.705	0.11		0.14	.230	0.18
VI	Inclination	.160		.810		.110		.725		46.880	−0.45	.275	
VII	Refraction	.140	1 20.6	.830	1 54.4	.120	1 3.6	.730	1 9.6	.880	1 17.0	.305	1 31.6

		22 Sextantis		b^2 Hydrae		δ Crateris	
		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	313 30 9.05		301 28 8.60		306 50 8.60	
		r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	41.865	4 37.02		5 23.23	42.775	4 53.46
II	Red. to Mer......	.920	0.07	44.300	0.16	.795	0.14
VI	Inclination	.970		.370	−0.18	.795	
VII	Refraction	.965	1 1.8	.350	1 35.8	.785	1 18.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Canis Majoris.....	6 59 45.58	11	+0.18	−44.55	305 37 49.4	36.3
29 Canis Majoris.....	7 15 3.14	11	+0.19	−44.55	296 44 26.5	36.6
Piazzi VII. 85	7 17 45.18	11	+0.17	−44.49	312 19 43.4	38.5
Piazzi VII. 116 .	7 23 40.78	11	+0.17	−44.55	309 45 51.9	35.0
λ Ursae Minoris S. P.	7 28 3.78	4	+7.29	[−45.79]	52 4	....
1 H. Draconis.......	9 23 2.69	8	−0.70	[−44.72]	42 52	....
κ Hydrae .	9 36 2.29	11	+0.18	−44.60	307 15 2.9	35.0
Lalande 19433 . .	9 50 41.00	11	+0.18	−44.56	302 35 40.4	35.6
22 Sextantis . . .	10 13 10.88	11	+0.17	−44.56	313 33 44.3	35.3
b^2 Hydrae	10 49 7.47	11	+0.18	−44.61	301 31 56.0	34.4
δ Crateris	11 14 51.69	11	+0.18	−44.56	306 53 44.2	35.1

h 7.235 .... *dt* .... s −44.535
Hourly rate .... − 0.0138

Adopted Equator Point......... 321° 6′ 35.″76

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 1	29.786	51.0	50.2
7 50	29.789	48.8	48.2
8 39	29.805	46.8	46.3
9 48	29.818	44.8	43.3
10 50	29.823	43.3	41.4
11 17	29.822	42.9	44.2

Notes.

γ Canis Majoris. Imag steady.

λ Ursae Minoris s. p. Im age very steady.

Lalande 19433. Imag somewhat unsteady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			302°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	s
303	+0.182	7 30	......	+12.466	+12.573	+12.680	+12.783	+12.888
304	0.181	8 0	......	12.438	12.538	12.636	12.735	12.830
305	0.179	8 30	......	12.445	12.537	12.626	12.714	12.802
306	0.178	9 0	+12.404	12.486	12.566	12.644	12.724	12.802
307	+0.176	9 30	12.490	12.558	12.627	12.694	12.760	12.825
		10 0	12.610	12.664	12.720	12.773	12.826	12.878
		10 30	+12.760	12.801	12.841	12.880	12.919	12.958
		11 0	......	+12.963	+12.988	+13.013	+13.038	+13.063

APPARENT RIGHT ASCENSION.	$D =$ Z. D. N. to 1895.0						R					
	302°	303°	304°	305°	306°	307°	302° 30′	303°	304°	305°	306°	307°
h m	″	″	″	″	″	″	″	″	″	″	″	″
7 30	.....	+ 6.87	+ 6.59	+ 6.32	+ 6.03	+ 5.75	90.89	89.17	85.88	82.74	79.76	76.91
8 0	.....	8.00	7.74	7.47	7.20	6.92	91.12	89.39	86.10	82.95	79.96	77.11
8 30	.....	9.12	8.88	8.61	8.36	8.09	91.35	89.62	86.32	83.16	80.17	77.30
9 0	−10.45	10.22	9.99	9.76	9.51	9.27	91.60	89.87	86.56	83.39	80.39	77.52
9 30	11.48	11.28	11.07	10.84	10.63	10.40	91.85	90.12	86.80	83.62	80.61	77.73
10 0	12.44	12.27	12.08	11.89	11.70	11.50	92.09	90.34	87.02	83.83	80.82	77.93
10 30	−13.33	13.17	13.02	12.86	12.70	12.53	92.28	90.53	87.20	84.00	80.98	78.09
11 0	.....	−13.99	+13.87	+13.74	+13.61	+13.48	92.19	90.45	87.12	83.93	80.91	78.02

1895 APRIL 5. ZONE 106. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	......	27.1	29.2	31.3	33.6	35.8	c	32 31.40	306 52 10.0 7.5	III B	39.600	7 31 59.75	−14 15 40.92	−14 2020
2	......	57.4	59.5	1.4	3.4	5.3	e	32 31.89	306 52 " "	VII B	39.385	7 32 0.24	14 15 44.37	14 2021
3	......	29.3	31.4	33.5	35.4	37.1	e	33 3.85	306 52 " "	VII A	49.425	7 32 32.22	14 6 3.25	14 2039
4	......	21.0	23.2	25.3	27.5	29.7	c	35 25.34	304 26 10.0 6.8	V	44.300	7 34 53.44	16 37 4.15	16 2069
5	......	43.7	45.9	47.7	49.8	51.6	e	38 18.01	305 18 10.0 7.4	VII C	48.825	7 37 46.19	15 50 1.54	15 1987
6	......	28.7	30.8	32.6	34.5	36.8	a	47 2.53	305 6 9.2 6.5	I B	41.200	7 46 30.68	16 1 19.58	15 2086
7	......	49.1	51.2	53.0	54.9	57.3	a	47 22.94	305 6 " "	III A	46.025	7 46 51.10	15 53 19.08	15 2091
8	......	20.7	22.7	24.8	27.2	29.2	c	47 24.92	305 6 " "	V B	47.205	7 46 53.07	15 59 25.17	15 2093
9	......	55.5	57.5	1.8	3.5	6.1	c_4 d_3	47 53.22	303 54 10.0 7.0	VI	48.615	7 47 21.24	17 7 47.44	17 2190
10	......	24.4	26.6	28.6	30.5	32.5	e	48 58.57	303 54 " "	VII C	45.200	7 48 26.58	−17 15 19.13	−17 2205
11	......	34.0	36.2	38.2	40.4	42.7	c	52 38.30	305 12 10.0 6.8	III	44.970	7 52 6.46	−15 50 55.09	−15 2144
12	8.5	53.1	55.1	56.9	58.7	1.0	a	54 26.65	306 6 10.0 7.1	I	41.450	7 53 54.88	14 58 0.23	14 2309
13	8.4	25.3	27.6	29.8	32.0	34.1	c	54 29.76	303 8 10.0 6.0	V	44.800	7 53 57.69	17 55 5.70	17 2257
14	8.3	12.8	14.8	17.1	19.3	21.5	c	55 17.10	304 38 10.0 6.0	V	46.000	7 54 45.19	16 24 38.59	16 2227
15	8.7	8.8	11.0	13.1	15.4	17.5	c	56 13.16	303 10 10.0 6.2	V	42.830	7 55 41.09	17 53 43.91	17 2272
16	9.2	20.8	22.8	25.0	27.2	29.4	c	57 25.04	304 38 10.0 6.7	III B	45.150	7 56 53.12	16 28 8.75	16 2249
17	8.5	13.7	15.9	17.7	19.6	22.0	a	58 47.70	304 38 " "	I	42.105	7 58 15.78	16 25 53.32	16 2257
18	8.5	45.0	47.1	48.9	50.9	53.1	a	59 18.92	304 38 " "	I	47.490	7 58 47.01	16 24 10.14	16 2263
19	9.1	2.2	4.5	6.2	8.2	10.6	a	0 36.28	304 30 10.0 6.5	I	42.825	8 0 4.35	16 33 40.62	16 2274
20	8.3	43.4	45.4	47.4	49.2	51.5	a	1 16.95	307 2 10.0 7.0	I	47.765	8 0 45.27	−13 59 59.15	−13 2380
21	8.7	32.8	34.4	38.6	40.8	42.8	b_2 c_3	1 42.87	306 50 9.0 5.8	III	44.180	8 1 11.17	−14 13 10.23	−14 2365
22	8.9	22.3	25.0	26.6	30.8	33.0	b_1 c_2	2 35.10	306 28 10.0 6.2	II	45.890	8 2 3.36	14 34 37.70	14 2372
23	8.0	53.5	55.6	57.8	0.0	2.1	c	2 57.80	307 0 10.0 7.5	V	47.865	8 2 26.11	14 1 58.53	13 2392
24	......	22.9	25.0	27.0	28.8	31.0	a	6 56.52	306 58 10.0 7.0	I A	41.100	8 6 24.82	14 2 54.70	13 2421
25	9.2	55.5	57.2	1.3	3.4	5.6	b_2 c_3	7 5.59	306 58 " "	III	46.680	8 6 33.89	14 4 22.65	13 2425
26	8.4	13.8	16.0	18.0	22.2	24.0	c_3 d_2	7 13.80	306 58 " "	V	46.160	8 6 42.10	14 4 33.03	13 2426
27	8.6	48.9	51.1	52.9	54.7	56.7	e	7 23.36	306 58 " "	VII B	44.040	8 6 51.66	14 8 27.51	14 2404
28	8.2	53.1	55.3	57.4	59.6	1.7	c	8 57.42	306 34 10.0 7.0	III	47.440	8 8 25.68	14 28 9.72	14 2424
29	8.2	33.7	35.9	37.9	40.2	42.3	c	16 38.00	307 0 10.0 7.4	III	45.350	8 16 6.29	14 2 51.10	13 2491
30	9.3	2.7	4.7	6.6	8.3	10.7	a	17 36.19	307 0 " "	I B	42.230	8 17 4.48	−14 7 4.65	−13 2500
31	8.7	35.7	37.8	40.0	42.2	44.2	c	17 39.98	307 0 " "	III B	42.670	8 17 8.27	−14 6 56.66	−13 2501
32	9.1	44.2	46.5	48.6	50.7	52.9	c	18 48.58	305 14 10.0 6.7	III	46.320	8 18 16.71	15 48 38.15	15 2406
33	9.5	28.0	30.2	32.4	34.6	36.7	c	19 32.38	306 52 10.0 6.9	III A	46.100	8 19 0.66	14 7 23.59	−13 2514

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
34	8.5	59.7	1.7	3.5	5.3	7.6	a	20 33.17	306 52 10.0 6.9	I (C) 47.575	8 20 1.44	—14 16 37.00	—14 2503
35	8.6	39.1	41.2	43.5	45.6	47.7	c	20 43.42	306 30 10.0 6.7	V A 41.515	8 20 11.67	14 30 53.11	14 2508
36	7.5	44.3	46.5	48.5	50.8	53.0	c	21 48.62	306 30 " "	III B 44.930	8 21 16.85	14 36 16.27	14 2517
37	8.0	46.1	48.3	50.1	51.9	54.3	a	23 19.79	306 30 " "	I B 44.675	8 22 48.02	14 36 21.24	14 2526
38	8.9	46.6	48.7	50.4	52.3	54.5	a	24 20.16	306 30 " "	I C 45.970	8 23 48.38	14 39 10.08	14 2536
39	8.2	40.7	42.8	45.0	47.1	49.3	c	24 44.98	305 18 10.0 7.1	III 48.460	8 24 13.11	15 43 58.64	15 2452
40	9.0	52.5	55.0	57.2	59.5	1.5	c	24 57.14	305 52 9.5 6.2	V 42.950	8 24 25.31	—15 11 44.00	—15 2455
41	9.4	4.7	6.7	9.0	11.1	13.3	c	27 8.96	307 0 10.0 7.1	III C 43.410	8 26 37.23	—14 9 58.64	—14 2554
42	9.1	23.5	25.6	27.7	29.9	32.0	c	27 27.74	307 0 " "	V A 42.220	8 26 56.02	14 0 40.30	13 2572
43	8.0	24.7	26.8	29.0	31.2	33.3	c	28 29.00	307 0 " "	III 39.690	8 27 57.27	14 4 43.72	13 2583
44	9.0	34.7	36.7	38.9	41.1	43.3	c	29 38.94	307 0 " "	III 44.180	8 29 7.21	14 3 17.95	13 2593
45	9.2	38.8	41.0	43.0	45.3	47.4	c	30 43.10	307 0 " "	III B 44.300	8 30 11.37	14 6 29.75	13 2600
46	8.8	51.1	53.2	55.4	57.5	59.7	c	32 55.38	306 18 10.0 6.5	III 46.820	8 32 23.59	14 44 30.37	14 2590
47	9.4	16.4	18.6	20.7	22.9	25.0	c	34 20.72	306 18 " "	III C 48.850	8 33 48.92	14 50 18.59	14 2595
48	9.3	51.0	53.1	55.1	57.4	59.6	c	34 55.24	306 18 " "	III B 44.010	8 34 23.45	14 48 38.69	14 2599
49	8.5	51.4	53.5	55.6	57.9	59.9	c	35 55.66	306 18 " "	III A 47.720	8 35 23.88	14 40 59.35	14 2608
50	8.9	44.8	46.8	49.0	51.4	53.4	c	36 49.08	306 18 " "	III B 43.890	8 36 17.29	—14 48 41.59	—14 2614
51	8.9	41.1	43.3	45.3	47.6	49.8	c	47 45.42	306 46 10.0 5.8	III 46.590	8 47 13.67	—14 16 38.45	—14 2678
52	9.1	2.4	4.7	6.7	8.9	11.2	c	49 6.78	304 40 10.0 6.3	III 47.340	8 48 34.86.	16 22 29.82	16 2621
53	9.1	27.9	30.1	32.3	34.5	36.5	c	51 32.26	305 58 10.0 6.1	III B 45.775	8 51 0.43	15 8 10.87	14 2706
54	7.7	41.1	43.2	45.3	47.6	49.8	c	51 45.40	305 58 " "	V 50.755	8 51 13.58	15 3 21.94	14 2707
55	……	29.9	32.0	34.0	36.3	38.4	c	54 34.12	305 24 10.0 6.0	III C 46.830	8 54 2.24	15 45 6.02	15 2656
56	8.1	47.2	49.5	51.5	55.8	57.5	c_3 d_2	54 47.27	305 24 " "	V A 45.530	8 54 15.41	15 35 49.75	15 2658
57	8.8	55.0	57.2	59.3	1.5	3.6	c	56 59.32	306 4 10.0 6.5	III 42.650	8 56 27.50	14 59 58.18	14 2726
58	9.0	59.5	1.4	3.3	5.1	7.5	a	1 33.01	306 28 10.0 6.4	I 45.900	9 1 1.23	14 34 55.56	14 2742
59	9.1	6.1	8.2	10.3	12.5	14.6	c	2 10.34	304 24 9.5 5.8	III C 49.540	9 1 38.39	16 44 19.34	16 2682
60	9.0	16.6	18.7	20.7	23.2	25.3	c	2 20.90	304 24 " "	VI 41.960	9 1 48.96	—16 40 18.59	—16 2683
61	8.8	58.5	0.6	2.8	5.0	7.1	c	4 2.80	304 58 10.0 6.0	III 44.020	9 3 30.90	—16 5 37.06	—15 2710
62	8.0	31.2	33.3	35.5	37.6	39.7	c	4 35.46	305 12 10.0 6.1	III 41.980	9 4 3.58	15 52 15.67	15 2712
63	8.9	51.0	53.0	55.2	57.4	59.6	c	5 55.24	306 20 10.0 6.3	III 48.225	9 5 23.45	14 42 13.02	14 2766
64	9.3	25.5	27.6	29.7	32.0	34.1	c	6 29.78	305 0 10.0 6.0	III 43.140	9 5 57.89	16 3 54.54	15 2725
65	8.5	47.0	49.1	51.2	53.5	55.5	c	12 51.26	305 58 9.6 5.6	III 44.680	9 12 19.45	15 5 24.42	14 2802
66	9.0	6.8	9.0	11.1	13.4	15.5	c	14 11.16	305 58 " "	III 48.580	9 13 39.35	15 4 9.93	14 2811
67	9.1	2.3	4.3	6.6	8.7	10.7	c	15 6.52	305 42 10.0 6.3	III 43.400	9 14 34.69	15 21 49.76	15 2762
68	7.5	17.4	19.6	21.7	23.9	26.0	c	15 21.72	305 42 " "	V B 44.660	9 14 49.89	15 24 39.65	15 2763
69	9.0	1.0	3.3	5.3	7.5	9.6	c	20 5.34	305 30 10.0 6.0	III B 49.970	9 19 33.49	15 34 59.42	15 2780
70	……	6.9	9.0	11.0	13.1	15.4	c	21 11.08	305 30 " "	III A 47.375	9 20 39.24	—15 29 21.02	—15 2790
71	8.7	18.2	20.5	22.6	26.9	28.5	c_3 d_2	21 18.31	305 30 " "	V C 45.220	9 20 46.46	—15 39 43.66	—15 2791
72	9.0	11.1	13.0	15.4	17.7	19.7	c	22 15.38	305 30 " "	III 41.700	9 21 43.54	15 34 24.88	15 2792
73	8.0	45.2	47.2	49.4	51.6	53.6	c	22 49.40	305 30 " "	V 40.630	9 22 17.56	15 34 45.91	15 2799
74	6.	7.6	9.7	11.8	14.0	16.0	c	47 11.82	306 40 10.0 6.0	III 47.020	9 46 40.09	14 22 38.16	14 2963
75	9.2	32.6	34.7	36.7	38.9	41.1	c	47 36.80	306 40 " "	III B 43.710	9 47 5.06	14 26 55.55	14 2965
76	9.1	37.6	39.6	41.7	43.9	46.0	c	49 41.76	306 54 9.7 5.5	III 42.090	9 49 10.04	14 10 13.09	13 2976
77	9.0	29.4	31.4	33.5	35.8	38.0	c	50 33.62	306 54 " "	III 42.215	9 50 1.91	14 10 10.86	13 2980
78	7.8	45.0	47.3	49.3	53.4	55.1	c_3 d_2	50 44.99	305 20 10.0 5.5	V (45).255	9 50 13.19	15 43 16.95	15 2929
79	8.8	51.3	53.4	55.5	57.7	59.7	c	55 55.52	303 54 10.0 6.1	III 44.960	9 55 23.65	17 9 27.16	16 2938
80	8.9	16.2	18.4	20.5	22.7	24.8	c	58 20.52	304 58 10.0 6.2	III 45.780	9 57 48.72	—16 5 8.72	—15 2967
81	8.0	13.4	15.5	17.6	19.7	21.8	c	4 17.60	305 56 10.0 6.0	III 45.090	10 3 45.87	—15 7 20.53	—14 3036
82	……	39.4	41.3	43.2	45.2	47.4	a	6 13.02	305 56 " "	I 43.110	10 5 41.29	15 7 58.33	14 3044
83	8.0	29.7	31.8	33.8	36.2	38.3	c	6 33.96	305 56 " "	III C 47.520	10 6 2.23	15 13 1.03	14 3046
84	8.1	57.3	59.5	1.7	3.9	6.0	c	7 1.68	303 54 10.0 5.8	V 47.875	10 6 29.85	17 8 34.26	16 2989
85	8.9	47.0	49.0	50.9	52.8	55.1	a	8 20.69	305 50 9.2 5.0	III 47.160	10 7 48.96	15 12 42.69	14 3055
86	9.1	31.0	33.3	35.4	37.6	39.7	c	8 35.40	305 50 " "	III B 45.660	10 8 3.67	15 16 25.31	15 3007
87	8.5	55.7	58.0	0.2	2.4	4.4	c	9 0.14	305 50 " "	V 49.485	10 8 28.41	15 11 58.57	14 3059
88	8.1	27.3	29.4	31.5	33.7	35.7	c	16 31.52	306 2 10.0 6.2	III A 41.960	10 15 59.82	14 59 7.67	14 3093
89	9.2	20.5	22.6	24.7	27.0	29.0	c	17 24.76	306 2 " "	III C 41.960	10 16 53.05	15 8 49.22	14 3098
90	9.0	57.3	59.5	1.5	3.6	5.9	c	21 1.56	306 36 10.0 6.4	III B 43.020	10 20 29.89	—14 31 14.90	—14 3116
91	9.1	43.9	46.1	48.2	50.4	52.5	c	21 48.22	306 36 " "	III 44.340	10 21 16.55	—14 27 35.87	—14 3119
92	9.2	42.8	44.9	47.0	49.1	51.3	c	22 47.02	304 40 10.0 5.6	III 45.710	10 22 15.28	16 23 15.52	16 3059
93	8.9	6.5	8.8	11.0	13.1	15.3	c	23 10.94	304 40 " "	III 44.210	10 22 39.20	16 23 44.38	16 3061
94	9.1	55.0	57.2	59.3	1.4	3.6	c	24 59.30	304 26 10.0 5.9	III 46.000	10 24 27.55	16 37 10.85	16 3065
95	9.2	30.2	32.3	34.1	36.0	38.4	a	27 3.78	307 0 10.0 6.6	I 43.510	10 26 32.15	14 3 50.92	13 3138
96	8.8	9.0	11.2	13.4	15.5	17.6	c	27 13.34	304 36 9.7 5.5	V C 45.560	10 26 41.61	16 33 46.07	16 3075
97	8.4	16.7	18.8	21.0	23.2	25.2	c	28 20.98	304 36 " "	V 48.260	10 27 49.26	16 26 28.20	16 3078
98	9.3	12.0	14.2	16.2	18.4	20.6	c	30 16.28	307 0 10.0 5.8	III 42.490	10 29 44.66	14 4 12.35	13 3158
99	9.0	39.7	42.0	44.1	46.2	48.3	c	30 44.06	306 40 10.0 6.0	III 45.610	10 30 12.43	14 23 12.86	14 3146
100	9.4	47.3	49.3	51.4	53.7	55.8	c	31 51.50	306 20 10.0 5.5	III 45.325	10 31 19.86	—14 43 19.62	—14 3149
101	9.4	39.5	41.6	43.5	45.2	47.5	a	34 13.44	304 14 10.0 5.8	I 42.470	10 33 41.72	—16 50 20.02	—16 3099
102	9.5	26.8	28.8	30.9	33.2	35.2	c	34 30.98	305 38 10.0 5.6	V 44.840	10 33 59.32	15 25 31.58	15 3096
103	8.8	23.0	25.0	27.4	29.4	31.5	c	36 27.26	306 20 10.0 5.7	III A 42.010	10 35 55.63	14 41 9.06	14 3161
104	9.1	37.9	40.0	42.2	44.4	46.4	c	37 42.18	306 20 " "	III C 42.160	10 37 10.55	14 50 47.77	14 3165
105	9.1	21.6	23.6	25.4	27.4	29.6	a	38 55.40	304 56 10.0 6.0	I B 46.910	10 38 23.73	16 10 7.14	15 3114
106	8.9	4.5	6.5	8.7	11.0	13.0	c	39 8.74	304 56 " "	V 43.820	10 38 37.07	16 7 53.48	15 3116
107	9.4	4.9	6.9	9.2	11.5	13.5	c	40 9.20	306 44 10.0 6.3	III 44.550	10 39 37.60	14 19 35.09	14 3172
108	9.0	19.0	21.0	22.8	24.5	26.9	a	41 52.49	306 34 9.7 5.7	I C 42.300	10 41 20.89	—14 36 45.09	—14 3175

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
109	8.0	58.3	0.5	2.6	4.9	7.0	c	42 2.66	306 34	9.7	5.7	III	41.810	10 41 31.06	−14 30 27.79	−14 3176
110	8.9	14.1	16.4	18.5	20.7	22.8	c	43 18.50	306 34	"	"	III C	47.950	10 42 46.89	−14 34 56.84	−14 3189
111	8.9	35.6	37.6	39.7	41.9	44.0	c	43 39.76	306 34	"	"	V A	45.740	10 43 8.16	−14 25 58.01	−14 3190
112	9.0	53.0	55.3	57.4	59.6	1.7	c	45 57.40	306 40	10.0	6.3	III B	42.380	10 45 25.80	14 27 30.38	14 3198
113	8.3	26.0	28.2	30.1	32.5	34.6	c	46 30.28	306 40	"	"	III A	40.215	10 45 58.69	14 21 43.52	14 3202
114	8.3	42.9	44.9	46.8	48.6	51.0	a	48 16.70	305 0	10.0	6.4	I	45.270	10 47 45.06	16 3 25.40	15 3150
115	9.0	26.0	28.2	30.3	32.5	34.5	c	48 30.30	305 32	10.0	5.7	III	42.875	10 47 58.68	15 32 10.79	15 3151
116	7.7	3.1	5.3	7.4	9.7	11.8	c	49 7.46	306 8	10.5	6.5	V	47.310	10 48 35.86	14 54 43.79	14 3213
117	9.0	25.5	27.6	29.7	32.0	34.0	c	50 29.76	306 8	"	"	III	45.940	10 49 58.17	14 55 9.89	14 3221
118	9.0	57.6	59.7	2.0	4.1	6.3	c	51 1.94	305 58	9.7	5.3	V	42.490	10 50 30.34	15 6 17.95	14 3223
119	8.9	1.5	3.5	5.7	7.9	10.0	c	52 5.72	305 58	"	"	III A	45.370	10 51 34.13	15 2 7.74	14 3229
120	9.1	47.8	49.9	52.0	54.2	56.3	c	52 52.04	305 58	"	"	III C	44.835	10 52 20.45	−15 11 59.53	−14 3232
121	7.0	1.7	3.7	6.0	8.1	10.3	c	55 5.96	305 14	10.0	5.9	III	46.480	10 54 34.36	−15 49 3.04	−15 3174
122	8.0	57.3	59.4	1.1	3.0	5.4	a	56 30.98	305 50	9.7	5.3	I	39.410	10 55 59.40	15 15 17.07	15 3178
123	9.3	8.0	10.2	12.1	13.8	16.1	a	57 41.88	305 8	10.0	5.5	III	43.480	10 57 10.29	15 56 1.36	15 3179
124	8.9	53.4	55.6	57.6	2.0	3.6	c_3 d_2	57 53.42	306 4	10.0	5.5	V	44.990	10 57 21.86	14 59 30.11	14 3246
125	9.0	38.2	40.3	42.3	44.0	45.9	e	58 12.62	306 44	10.0	6.0	VII	44.880	10 57 41.08	14 19 30.39	14 3247
126	9.0	35.3	37.2	39.2	41.0	43.3	a	0 8.82	306 44	"	"	I B	43.585	10 59 37.28	14 23 8.22	14 3255
127	9.3	55.2	57.3	59.5	1.6	3.8	c	0 59.48	305 46	10.0	6.0	III	41.930	11 0 27.92	15 18 29.33	15 3190
128	9.1	7.6	9.7	11.9	14.1	16.3	c	2 11.92	305 46	"	"	III	44.565	11 1 40.36	15 17 38.88	15 3197
129	8.8	35.2	37.4	39.4	41.6	43.8	c	2 39.48	306 10	10.0	5.8	III C	42.880	11 2 7.93	15 0 36.99	14 3262
130	8.7	57.7	59.6	4.0	5.7	8.3	c_4 d_3	2 55.49	306 10	"	"	VI A	47.610	11 2 23.95	−14 49 24.96	−14 3263
131	8.8	3.0	5.1	7.3	9.5	11.5	c	4 7.28	306 10	"	"	V C	41.250	11 3 35.74	−15 1 8.23	−14 3266
132	9.3	43.8	46.0	48.0	50.1	51.9	e	4 18.35	306 10	"	"	VII B	37.465	11 3 46.81	14 59 8.42	14 3268
133	9.0	16.0	18.2	20.3	22.5	24.6	c	5 20.32	306 32	10.0	5.6	V	40.925	11 4 48.80	14 32 47.44	14 3272
134	9.1	2.4	4.6	6.7	8.8	10.8	c	8 6.66	305 54	9.5	5.4	III	44.480	11 7 35.14	15 9 41.16	14 3281
135	9.2	57.0	59.1	1.2	3.4	5.7	c	9 1.28	306 26	10.0	5.9	III C	46.620	11 8 29.77	14 43 24.92	14 3286
136	9.1	30.5	32.9	34.9	36.8	38.7	e	9 5.20	306 26	"	"	VII	42.530	11 8 33.69	14 38 17.23	14 3287
137	9.2	35.0	37.3	39.3	41.5	43.6	c	10 39.34	306 26	"	"	III A	39.230	11 10 7.83	14 36 5.42	14 3295
138	8.8	35.6	37.8	40.0	42.1	44.3	c	12 39.96	306 32	10.0	6.3	III	41.620	11 12 8.46	14 32 33.89	14 3297
139	9.2	27.5	29.6	31.8	34.0	36.1	c	13 31.80	305 48	9.5	5.3	III	41.825	11 13 0.29	15 16 32.81	15 3236
140	9.3	45.5	47.6	49.3	51.0	53.6	a	17 19.04	306 32	10.0	6.0	I	45.830	11 16 47.56	−14 31 13.03	−14 3308
141	9.4	54.8	56.9	58.7	0.5	2.6	a	18 28.29	306 54	10.0	5.6	I	45.130	11 17 56.82	−14 9 25.70	−13 3357
142	8.7	33.4	35.5	37.7	39.9	41.9	c	18 37.68	306 54	"	"	III	47.655	11 18 6.21	14 8 37.79	13 3359
143	8.7	2.0	4.2	6.2	8.2	9.9	e	18 36.34	305 0	10.5	6.4	VII	45.560	11 18 4.84	16 3 23.22	15 3256
144	8.7	8.6	10.8	12.9	14.8	16.7	e	23 43.10	305 44	10.2	6.5	VII	43.080	11 23 11.64	15 20 9.07	15 3272
145	9.2	10.8	13.0	15.0	16.9	18.8	e	24 45.35	306 30	10.0	6.1	V	44.570	11 24 13.90	14 33 38.50	14 3332
146	9.2	51.5	53.5	55.7	58.0	0.0	c	25 55.74	306 18	10.0	5.8	III	42.590	11 25 24.30	14 46 16.89	14 3338
147	8.6	7.9	10.0	12.2	14.3	16.4	c	28 12.16	305 0	10.0	5.5	III	41.470	11 27 40.71	16 4 42.34	15 3291
148	9.3	26.8	29.0	31.3	33.4	35.4	c	29 31.18	306 56	11.0	6.6	III A	38.720	11 28 59.76	14 6 13.96	13 3397
149	9.0	26.2	28.1	30.0	31.8	34.1	a	30 59.63	306 56	"	"	I	44.000	11 30 28.21	14 7 46.83	13 3405
150	8.8	6.9	9.0	11.3	13.6	15.7	c	31 11.30	305 50	10.0	5.6	V	41.140	11 30 39.88	−15 14 46.68	−14 3355
151	9.0	6.1	8.3	10.4	12.5	14.7	c	33 10.40	306 56	9.5	5.4	III	47.010	11 32 38.99	−14 6 51.04	−13 3412
152	8.6	8.7	10.7	13.0	15.1	17.3	c	34 12.96	306 34	10.0	6.0	III	40.915	11 33 41.56	14 30 48.48	14 3370
153	8.9	23.9	25.9	28.2	30.3	32.5	c	34 28.16	306 34	"	"	V A	37.545	11 33 56.76	−14 28 38.60	−14 3371

Reduction Elements. Zone 106.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 5.3....	+0.243	+0.166	+0.053	+0.192	+0.170	−0.006
5.5....	+0.140	+0.174	−0.064			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi VII. 116		Lalande 14810		26 Monocerotis		4 Navis		δ Crateris		γ Crateris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	309 42 8.90		298 58 8.50		311 44 8.60		306 44 9.30		306 50 8.35		303 56 7.80	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42.820	4 54.48	45.880	5 53.81	43.450	5 6.25	43.460	5 7.29	42.560	4 49.38		5 8.50
II Red. to Mer......	.825	0.11	.925	0.22	.440	0.09	.505	0.14	.565	0.14	43.575	0.14
VI Inclination......	.860		.975		.455		.540		.570		.580	−0.18
VII Refraction.......	.860	1 8.6	.960	1 42.6	.475	1 4.0	.530	1 16.4	.605	1 17.5	.560	1 26.2

	κ Crateris		ζ Crateris	
	° ′ ″		° ′ ″	
CIRCLE READING.	309 16 8.60		303 16 7.60	
	r	′ ″	r	′ ″
I Microm. Eq......	41.620	4 31.65	44.940	5 35.42
II Red. to Mer......	.625	0.12	.980	0.18
VI Inclination......	.685		45.010	
VII Refraction.......	.675	1 11.1	44.975	1 28.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi VII. 116	7 23 40.87	11	+ 0.30	−44.78	309 45 54.9	38.0
λ Ursae Minoris s. p.	7 28 25.42	5	−16.76	[−42.29]	52 6	....
Lalande 14810.....	7 30 18.80	11	+ 0.29	−44.81	299 2 19.9	37.8
26 Monocerotis	7 36 59.39	11	+ 0.30	−44.90	311 48 10.9	38.6
4 Navis............	7 41 52.25	11	+ 0.30	−44.82	306 48 0.3	37.9
δ Crateris..........	11 14 51.95	11	+ 0.30	−44.94	306 53 40.4	31.4
γ Crateris..........	11 20 24.69	11	+ 0.30	−44.97	303 59 50.1	30.9
κ Crateris..........	11 22 38.66	11	+ 0.30	−44.87	309 19 29.3	30.2
γ Cephei s. p........	11 35 41.44	7	− 1.21	[−45.10]	64 0	....
ζ Crateris..........	11 40 12.89	11	+ 0.30	−44.86	303 20 14.8	30.8

h		s
7.555	............dt	−44.828
	Hourly rate	− 0.0213

	h m	° ′ ″
Adopted Equator Point before	9 24..	321 6 38.08
Adopted Equator Point after	9 24..	321 6 30.82

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 36	29.950	59.0	58.2
8 25	29.947	56.1	55.3
9 22	29.970	54.3	53.0
10 35	29.968	52.2	50.2
11 37	29.970	51.2	49.2

Notes.

50. Very slight haze.

55. Faint close companion s. f.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	A=α to 1900.0					
			303°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	s
303	+0.294	7 30	+12.483	+12.592	+12.698	+12.802	+12.906	......
304	0.295	8 0	+12.456	12.556	12.656	12.753	12.848	+12.945
305	0.296	8 30	......	12.553	12.643	12.730	12.819	12.905
306	0.297	9 0	......	12.581	12.660	12.738	12.816	......
307	0.298	9 30	......	12.641	12.707	12.774	12.839	......
308	+0.299	10 0	......	12.731	12.785	12.837	12.889	12.940
		10 30	......	12.850	12.889	12.928	12.967	13.004
		11 0	......	+12.995	13.020	13.044	13.069	+13.091
		11 30	......	......	13.176	13.185	13.193	......
		12 0	......	......	+13.350	+13.344	+13.338	......

APPARENT RIGHT ASCENSION.	D=Z. D. N. to 1895.0						R					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
7 30	+6.83	+ 6.55	+ 6.27	+ 6.00	+ 5.71	.....	87.92	84.68	81.58	78.65	75.84	74.47
8 0	+7.98	7.71	7.45	7.17	6.90	+ 6.62	88.23	84.98	81.87	78.92	76.10	74.73
8 30	....	8.89	8.63	8.36	8.10	7.83	88.53	85.27	82.15	79.20	76.37	74.99
9 0	....	10.02	9.78	9.54	9.29	.....	88.78	85.51	82.38	79.41	76.58	75.[illegible]
9 30	....	11.11	10.89	10.67	10.44	.....	89.02	85.74	82.60	79.63	76.79	75.40
10 0	....	12.14	11.94	11.75	11.55	11.35	89.23	85.94	82.79	79.82	76.97	75.58
10 30	....	13.09	12.93	12.76	12.59	12.42	89.43	86.14	82.98	80.00	77.14	75.75
11 0	....	+13.95	13.81	13.68	13.55	+13.41	89.56	86.26	83.10	80.11	77.25	75.86
11 30	....	.....	14.61	14.51	14.41	.....	89.64	86.34	83.18	80.19	77.32	75.93
12 0	....	.....	+15.26	+15.21	+15.14	.....	89.72	86.42	83.25	80.26	77.39	76.00

1895 APRIL 11. ZONE 107. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	......	34.9	37.0	38.7	40.7	43.0	a	1 8.82	304	18	10.0	10.0	I	46.770	8 0 35.26	−16 44 23.33	−16 2277
2	......	49.6	51.8	53.9	58.0	59.8	$c_3 d_2$	5 49.56	304	22	10.0	9.0	V	47.600	8 5 16.00	16 40 10.23	16 2323
3	......	3.0	5.2	7.3	9.4	11.7	c	7 7.32	304	46	10.0	10.2	V	41.910	8 6 33.80	16 17 58.07	16 2334
4	......	16.5	18.8	20.8	22.6	24.5	e	7 50.99	305	48	10.0	9.6	VII	48.720	8 7 17.57	15 13 45.24	15 2307
5	......	47.2	49.3	51.3	53.3	55.0	e	8 21.57	305	48	"	"	VII	46.590	8 7 48.15	15 14 26.31	15 2314
6	......	53.2	55.3	57.2	59.1	1.0	e	9 27.51	305	48	"	"	V B	47.455	8 8 54.08	15 17 23.53	15 2327
7	......	20.0	22.2	24.4	26.6	28.7	c	10 24.38	305	48	"	"	V	48.210	8 9 50.95	15 13 55.70	15 2336
8	8.5	4.4	6.5	8.7	10.9	13.0	c	24 8.70	303	40	10.0	9.3	III A	39.320	8 23 35.06	17 21 42.07	17 2507
9	9.0	2.7	4.5	8.6	10.8	13.0	$b_2 c_3$	25 13.00	303	40	"	"	III B	40.930	8 24 39.35	17 27 40.03	17 2516
10	8.4	22.9	25.0	27.2	29.5	31.7	c	25 27.26	303	40	"	"	V	41.580	8 24 53.62	−17 24 14.18	−17 2518
11	9.0	21.0	23.0	24.9	26.7	29.0	a	26 54.67	305	50	10.0	9.4	I B	40.650	8 26 21.23	−15 17 39.13	−15 2473
12		55.0	57.4	59.6	1.7	3.8	c	26 59.50	305	50	"	"	VI	45.445	8 26 26.06	15 12 54.29	15 2474
13		54.2	56.2	58.0	59.9	2.3	a	28 27.78	306	22	10.0	9.5	I	43.500	8 27 54.40	−14 41 29.59	−14 2564

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
14	8.5	32.9	35.1	36.9	38.7	41.1	a	29 6.77	305 10 10.0 9.4	I 44.965	8 28 33.27	−15 53 5.00	−15 2488
15	9.1	3.8	6.0	8.1	10.3	12.4	c	29 8.12	305 10 " "	III B 45.640	8 28 34.62	15 56 6.40	15 2489
16	9.0	18.3	20.5	22.7	24.9	26.9	c	29 22.66	305 10 " "	V 40.830	8 28 49.16	15 54 25.35	15 2492
17	8.7	11.7	14.0	16.0	17.9	19.8	e	29 46.30	306 18 10.0 9.5	VII 47.040	8 29 12.91	14 44 23.32	14 2573
18	9.1	27.3	29.6	31.7	33.9	36.0	c	33 31.70	303 0 10.0 9.4	III B 45.605	8 32 58.00	18 6 14.93	17 2583
19	8.9	50.9	53.0	55.2	57.4	59.6	c	33 55.22	303 0 " "	III 44.460	8 33 21.52	18 3 23.23	17 2587
20	8.0	25.2	27.4	29.6	31.7	33.9	c	35 29.56	303 12 10.0 9.2	III B 43.920	8 34 55.89	−17 54 47.34	−17 2597
21	9.0	4.1	6.4	8.6	10.7	12.9	c	36 8.54	303 12 " "	III B 48.055	8 35 34.87	−17 53 28.18	−17 2604
22	9.0	33.0	35.3	37.5	39.6	41.7	c	36 37.42	303 12 " "	V C 45.710	8 36 3.74	17 57 27.46	17 2607
23	8.9	10.6	12.9	15.0	16.8	18.7	e	36 44.76	303 12 " "	VII A 46.195	8 36 11.10	17 47 35.59	17 2609
24	8.9	40.5	42.8	44.9	47.1	49.2	c	37 44.90	303 12 " "	V C 43.235	8 37 11.22	17 58 13.96	17 2614
25	8.7	17.6	19.8	24.0	25.6	28.3	$c_4 d_3$	51 15.45	305 18 10.0 9.0	VI 42.250	8 50 41.97	15 46 4.53	15 2635
26	9.2	19.0	21.3	23.3	25.6	27.7	c	52 23.38	305 18 " "	V 45.760	8 51 49.91	15 44 57.38	15 2644
27	8.6	55.9	58.1	0.4	2.6	4.6	c	55 0.32	303 44 10.0 8.9	III B 45.285	8 54 26.71	17 22 25.49	17 2706
28	9.2	28.6	30.8	33.0	35.2	37.3	c	55 32.98	303 44 " "	III 44.280	8 54 59.37	17 19 30.99	17 2707
29	8.6	45.0	47.0	49.2	51.5	53.5	c	56 49.24	305 8 9.7 8.5	III B 47.920	8 56 15.75	15 57 31.50	15 2667
30	9.0	11.4	13.5	15.7	17.9	20.2	c	58 15.74	305 8 " "	III 45.880	8 57 42.26	−15 54 57.24	−15 2674
31	9.1	58.6	0.7	2.9	5.2	7.4	c	0 2.96	304 14 10.0 8.6	III A 41.240	8 59 29.41	−16 47 14.54	−16 2676
32	7.0	32.4	34.5	36.6	38.9	41.0	c	0 36.68	304 14 " "	III 41.810	9 0 3.13	16 50 18.43	16 2679
33	8.2	10.2	12.3	14.5	16.7	18.9	c	1 14.52	304 14 " "	III C 42.750	9 0 40.96	16 56 27.33	16 2681
34	8.1	58.2	0.3	2.2	4.0	6.5	a	4 32.22	304 14 " "	I B 49.770	9 3 58.67	16 51 0.08	16 2691
35	8.7	23.8	26.0	28.0	29.9	32.2	a	4 58.12	303 14 10.0 8.2	I 45.620	9 4 24.49	17 49 9.19	17 2763
36	......	56.5	58.8	1.0	3.0	5.4	c	5 0.94	303 14 " "	III C 46.130	9 4 27.30	17 55 26.74	17 2765
37	9.1	43.0	45.2	47.2	49.1	51.0	e	5 16.97	302 48 10.8 9.5	V B 44.660	9 4 43.30	18 18 42.67	18 2587
38	8.3	15.5	17.7	19.7	21.7	23.5	e	5 49.50	302 48 " "	VII 47.410	9 5 15.83	18 14 36.46	18 2596
39	9.1	50.3	52.4	54.6	56.8	59.0	c	8 54.62	302 48 " "	III B 44.230	9 8 20.95	18 18 51.64	18 2608
40	8.0	14.0	16.2	18.5	20.8	22.9	c	10 18.48	302 48 " "	III 43.940	9 9 44.82	−18 15 43.76	−18 2613
41	8.7	35.3	37.5	39.6	41.8	43.8	c	12 39.60	303 48 10.0 9.2	III 46.280	9 12 6.03	−17 14 56.85	−17 2804
42	8.2	44.5	46.4	48.5	50.3	52.7	a	14 18.36	304 50 10.5 9.7	I 47.210	9 13 44.88	16 12 35.24	16 2742
43	9.1	31.5	33.6	35.8	38.0	40.2	c	14 35.82	303 22 9.0 8.2	III C 47.250	9 14 2.22	17 47 7.85	17 2816
44	......	23.7	26.2	28.4	30.7	32.8	c	15 28.36	303 22 " "	V A 41.040	9 14 54.77	17 39 25.90	17 2820
45	9.0	51.9	54.2	56.3	0.6	2.3	$c_3 d_2$	15 51.97	303 22 " "	V B 41.285	9 15 18.37	17 45 49.93	17 2821
46	8.9	34.4	36.6	38.8	40.9	43.0	c	16 38.74	303 22 " "	III C 42.900	9 16 5.14	17 48 31.86	17 2826
47	7.9	47.8	49.9	52.1	54.3	56.5	c	20 52.12	304 20 10.0 9.5	III B 42.825	9 20 18.61	16 47 17.27	16 2778
48	9.1	5.2	7.3	9.5	11.6	13.7	c	21 9.46	304 20 " "	V A 44.290	9 20 35.96	16 40 20.85	16 2779
49	7.0	45.9	48.1	50.2	52.5	54.6	c	21 50.26	303 32 10.0 9.5	V 46.480	9 21 16.69	17 30 56.35	17 2855
50	9.0	54.8	57.0	59.0	1.5	3.5	c	36 59.16	303 42 10.0 9.4	III B 41.820	9 36 25.63	−17 25 42.33	−17 2931
51	8.9	21.6	23.7	25.9	28.2	30.3	c	37 25.94	303 42 " "	III B 41.490	9 36 52.41	−17 25 48.74	−17 2934
52	8.4	36.5	38.6	40.9	43.0	45.3	c	37 40.86	303 42 " "	V 47.520	9 37 7.34	17 20 39.64	17 2936
53	9.0	18.0	20.5	22.4	24.3	26.3	e	37 52.32	303 42 " "	VII C 43.360	9 37 18.79	17 28 25.40	17 2938
54	9.1	54.0	56.3	58.4	0.5	2.8	c	43 58.40	303 0 10.0 9.1	III C 47.750	9 43 24.84	18 9 5.39	17 2969
55	8.1	53.6	55.9	58.0	0.4	2.5	c	44 58.08	303 0 " "	III 50.330	9 44 24.53	18 1 49.28	17 2974
56	9.0	42.2	44.2	46.4	48.7	50.8	c	47 46.46	304 8 10.0 9.2	III A 43.375	9 47 13.00	16 52 45.06	16 2904
57	8.8	17.8	19.9	22.1	24.3	26.5	c	48 22.12	304 8 " "	III B 48.440	9 47 48.66	16 57 36.47	16 2909
58	9.1	27.6	29.8	32.0	34.1	36.3	c	49 31.96	304 8 " "	III C 47.030	9 48 58.50	17 1 16.74	16 2915
59	8.9	16.0	18.3	20.5	22.7	24.8	c	50 20.46	304 8 " "	III A 42.370	9 49 47.01	16 53 4.89	16 2917
60	7.8	19.0	21.3	23.4	25.6	27.6	c	51 23.38	304 8 " "	III B 41.840	9 50 49.93	−16 59 43.75	−16 2921
61	9.0	27.1	29.4	31.5	33.6	35.8	c	52 31.48	304 8 " "	III B 43.600	9 51 58.04	−16 59 10.21	−16 2923
62	9.3	10.5	12.7	14.9	17.1	19.3	c	53 14.90	304 8 " "	III B 48.230	9 52 41.46	16 57 41.48	16 2928
63	8.8	5.6	7.7	10.0	12.2	14.4	c	56 9.98	303 42 10.0 8.4	V 46.665	9 55 36.52	17 21 0.39	17 3030
64	8.2	14.6	16.8	18.6	20.6	23.0	a	59 48.82	303 24 10.0 9.6	I A 42.720	9 59 15.35	17 37 1.75	17 3046
65	7.8	45.9	48.1	50.3	52.5	54.7	c	59 50.30	303 24 " "	III (A) 42.735	9 59 16.83	17 37 1.79	17 3047
66	9.1	31.0	33.2	35.3	37.5	39.6	c	0 35.32	303 24 " "	III B 43.265	10 0 1.85	17 43 20.27	17 3057
67	8.9	23.4	25.5	27.2	29.2	31.4	a	4 57.46	303 24 10.0 9.5	I B 48.250	10 4 24.01	17 41 45.00	17 3071
68	7.8	57.7	0.0	2.3	4.4	6.6	c	5 2.20	303 24 " "	III 47.200	10 4 28.75	17 38 51.80	17 3072
69	9.1	24.9	27.1	29.2	31.5	33.7	c	5 29.28	303 24 " "	III C 43.670	10 4 55.82	17 46 26.43	17 3074
70	8.9	24.3	26.5	28.4	30.1	32.5	a	6 58.45	303 34 10.0 8.5	I 43.730	10 6 25.01	−17 29 58.19	−17 3082
71	8.7	2.9	5.1	7.2	9.5	11.6	c	7 7.26	303 12 10.0 8.8	V A 47.110	10 6 33.81	−17 47 40.31	−17 3083
72	9.1	24.5	26.6	28.7	31.0	33.2	c	11 28.80	303 12 " "	III B 42.510	10 10 55.36	17 55 37.78	17 3100
73	8.5	26.5	28.8	30.9	33.2	35.3	c	12 30.94	303 12 " "	III A 43.710	10 11 57.51	17 48 46.38	17 3106
74	8.9	18.3	20.6	22.6	24.8	27.0	c	13 22.66	303 12 " "	III C 45.015	10 12 49.22	17 58 2.99	17 3112
75	......	16.3	18.4	20.5	22.7	24.8	c	16 20.54	304 50 10.0 8.9	III 47.095	10 15 47.20	16 12 51.67	15 3031
76	6.	48.2	50.5	52.5	54.7	56.6	c	16 52.50	303 36 10.0 9.1	V 41.090	10 16 19.11	17 28 51.05	17 3129
77	8.3	39.3	41.5	43.7	45.9	48.0	c	17 43.68	303 36 " "	III B 41.950	10 17 10.28	17 31 48.11	17 3133
78	8.8	27.2	29.4	31.6	33.8	36.0	c	21 31.60	303 8 10.0 9.4	III 44.960	10 20 58.20	17 55 38.47	17 3145
79	8.6	47.7	49.8	52.0	54.2	56.4	c	22 52.02	303 20 9.4 8.8	III 41.190	10 22 18.63	17 44 50.99	17 3150
80	8.0	4.6	6.9	9.1	11.2	13.3	c	23 9.02	303 20 " "	V B 45.760	10 22 35.63	−17 46 37.38	−17 3153
81	9.1	56.3	58.6	0.8	2.8	4.9	c	26 0.68	303 58 9.5 8.6	III B 42.360	10 25 27.34	−17 9 40.89	−16 3071
82	8.9	42.4	44.6	46.7	48.7	51.1	c	26 46.70	303 58 " "	III A 39.600	10 26 13.36	17 4 5.46	16 3072
83	9.1	24.9	27.0	28.9	30.9	32.8	e	26 58.84	303 16 9.6 8.3	VII C 44.800	10 26 25.46	17 54 8.97	17 3166
84	9.0	8.3	10.5	12.6	14.6	16.5	e	27 42.46	303 16 " "	V 44.320	10 27 9.09	17 47 52.38	17 3170
85	9.0	53.0	55.1	57.3	59.6	1.7	c	28 57.34	303 16 " "	III A 39.515	10 28 23.98	17 46 9.72	17 3175
86	9.0	27.0	29.2	31.4	33.7	35.8	c	30 31.42	303 16 " "	III 42.590	10 29 58.07	17 48 25.63	17 3182
87	......	21.6	23.7	25.9	28.2	30.4	c	31 25.96	304 12 10.8 10.1	III 45.790	10 30 52.66	−16 51 19.89	−16 3090

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
88	9.0	10.5	12.7	14.8	17.0	19.2	c	32 14.84	303	26	10.0	9.7	III	46.830	10 31 41.50	−17 37 3.05	−17 3191
89	8.8	16.1	18.3	20.5	22.9	24.9	c	33 20.54	303	48	10.0	9.0	III B	47.405	10 32 47.22	17 18 5.18	17 3197
90	8.6	32.0	34.2	36.3	38.6	40.7	c	33 36.36	303	48	"	"	V A	43.295	10 33 3.04	−17 12 55.68	−16 3097
91	......	10.2	12.4	14.6	16.7	18.9	c	34 14.56	303	48	"	"	V C	45.420	10 33 41.24	−17 21 56.17	−17 3200
92	8.9	43.7	45.9	48.1	52.4	54.0	c_3 d_2	34 43.73	303	22	10.0	9.5	V	41.220	10 34 10.40	17 42 51.72	17 3202
93	8.9	21.2	23.7	25.6	27.6	29.5	e	34 55.46	303	8	10.0	9.3	VII	46.035	10 34 22.12	17 55 20.34	17 3203
94	9.0	8.7	10.9	13.0	15.3	17.4	c	36 13.06	302	58	9.5	8.5	V	44.640	10 35 39.72	18 5 48.34	17 3209
95	8.8	45.9	48.0	49.8	51.8	54.0	a	38 19.93	303	52	10.0	8.7	I	43.000	10 37 46.64	17 12 15.83	16 3111
96	9.2	55.0	57.1	59.2	1.4	3.6	c	38 59.26	306	38	10.0	9.1	III	43.390	10 38 26.08	14 26 0.82	14 3166
97	9.2	55.4	57.5	59.5	1.8	3.9	c	40 59.62	305	24	10.0	9.2	III	46.310	10 40 26.40	15 39 8.41	15 3121
98	9.1	7.2	9.5	11.6	13.8	15.9	c	42 11.60	303	32	10.0	9.6	III	46.160	10 41 38.31	17 31 16.92	17 3225
99	9.4	29.2	31.4	33.7	35.8	38.0	c	42 33.62	303	8	9.7	8.5	V	43.535	10 42 0.32	17 56 9.71	17 3227
100	9.0	22.8	25.2	27.0	29.0	30.9	e	42 56.97	303	26	10.0	9.1	VII	45.520	10 42 23.68	−17 37 30.39	−17 3230
101	8.0	11.5	13.5	15.4	17.3	19.7	a	46 45.61	303	16	10.0	9.2	I	43.485	10 46 12.33	−17 48 9.29	−17 3245
102	8.9	43.8	46.0	48.2	50.3	52.4	c	46 48.14	(304	6)	10.0	9.0	III	45.700	10 46 14.90	16 57 24.79	16 3136
103	......	14.6	16.9	19.0	21.2	23.4	c	47 19.02	303	52	10.0	8.3	V A	40.210	10 46 45.76	17 9 56.73	16 3139
104	9.1	15.9	18.0	20.1	22.4	24.5	c	48 20.18	303	52	"	"	V (B)	44.520	10 47 46.93	17 15 2.75	17 3253
105	8.9	2.6	4.7	6.8	9.0	11.2	c	49 6.86	305	46	10.0	9.3	V	45.530	10 48 33.68	15 17 23.59	15 3155
106	9.1	42.4	44.5	46.4	48.2	50.7	a	52 16.63	302	56	10.0	9.0	I	43.790	10 51 43.37	18 8 5.25	17 3259
107	8.6	27.1	29.4	31.6	33.7	35.9	c	52 31.54	303	6	10.0	8.8	III	45.580	10 51 58.29	17 57 31.03	17 3261
108	9.2	50.9	53.0	55.1	57.5	59.6	c	52 55.22	304	38	10.0	9.0	V	47.770	10 52 22.02	16 24 44.46	16 3155
109	9.3	29.8	32.0	34.2	36.3	38.5	c	53 34.16	304	38	"	"	V	42.830	10 53 0.96	16 26 19.33	16 3157
110	5.	17.3	18.8	23.2	25.4	27.5	b_2 c_3	55 27.52	303	18	10.0	8.7	III	44.100	10 54 54.28	−17 45 59.12	−17 3273
111	9.4	57.0	58.3	2.5	4.8	7.1	b_2 c_3	56 7.02	303	18	"	"	III B	49.905	10 55 33.79	−17 47 21.58	−17 3279
112	8.9	11.4	13.7	15.8	20.2	21.9	c_3 d_2	56 11.51	303	18	"	"	V B	50.130	10 55 38.28	17 47 17.51	17 3281
113	9.3	47.6	49.8	51.9	53.8	55.8	e	56 21.74	303	18	"	"	VII C	52.200	10 55 48.51	17 49 49.99	17 3282
114	8.7	23.0	25.2	27.2	29.0	31.0	e	57 57.29	304	46	10.0	9.0	VII A	48.455	10 57 24.12	16 13 16.38	15 3183
115	9.3	19.4	21.6	23.5	25.6	27.4	e	58 53.71	304	46	"	"	V A	43.910	10 58 20.54	16 14 43.78	16 3178
116	8.9	48.4	50.5	52.4	54.2	56.6	a	0 22.32	304	46	"	"	III B	47.310	10 59 49.16	16 20 7.04	16 3181
117	9.7	0.9	3.0	5.2	7.4	9.5	c	1 5.20	304	52	10.0	9.8	III	46.570	11 0 32.04	16 11 6.78	15 3191
118	......	1.6	5.9	8.2	10.4	14.8	c_1 d_1	2 6.01	302	48	10.0	8.9	III	46.380	11 1 32.80	18 15 17.54	18 3103
119	9.4	21.8	24.0	26.2	28.5	30.6	c	2 26.22	302	48	"	"	V B	42.225	11 1 53.01	18 19 51.37	18 3104
120	9.2	15.9	18.2	20.3	22.2	24.0	e	2 50.07	303	14	10.0	9.3	VII	43.210	11 2 16.87	−17 50 17.31	−17 3303
121	9.6	57.8	0.0	2.1	4.3	6.4	c	5 2.12	303	38	10.0	8.8	III	43.320	11 4 28.94	−17 26 13.81	−17 3311
122	9.4	56.9	59.1	1.1	3.4	5.6	c	6 1.22	303	4	10.0	9.0	III A	45.725	11 5 28.03	17 56 14.77	17 3315
123	9.0	38.0	40.0	42.0	43.8	46.1	a	7 12.17	303	4	"	"	I C	43.680	11 6 39.00	18 6 35.58	17 3318
124	7.5	31.7	33.7	35.6	37.4	39.8	a	8 5.80	303	4	"	"	I A	42.340	11 7 32.63	17 57 19.58	17 3321
125	8.8	9.2	11.5	13.6	15.8	18.2	c	8 13.66	302	56	10.0	9.2	V	44.420	11 7 40.49	18 7 55.44	17 3323
126	8.0	40.6	42.8	44.9	47.2	49.3	c	9 44.96	304	44	10.8	9.9	III	42.010	11 9 11.85	16 20 34.96	16 3210
127	9.0	27.5	29.7	31.9	34.1	36.2	c	10 31.88	302	48	10.0	9.0	V	46.780	11 9 58.72	18 15 10.86	18 3135
128	9.1	56.5	58.6	0.7	3.0	5.3	c	13 0.82	302	48	10.0	9.0	III	43.030	11 12 27.68	18 16 22.66	18 3147
129	9.2	53.7	55.8	57.5	59.3	1.7	a	14 27.73	303	12	10.5	9.9	I A	43.780	11 13 54.60	17 48 51.25	17 3351
130	9.2	7.7	9.9	11.9	13.7	16.0	a	14 42.00	303	12	"	"	III C	45.790	11 14 8.87	−17 57 54.53	−17 3352
131	8.9	20.1	22.2	24.4	26.6	28.7	c	15 24.40	303	42	10.0	8.7	III	45.690	11 14 51.29	−17 21 28.94	−17 3353
132	8.9	55.6	57.9	0.1	2.4	4.4	c	16 0.08	302	42	10.0	9.5	III	43.320	11 15 26.95	18 22 17.38	18 3156
133	9.2	37.4	39.5	41.5	43.3	45.7	a	17 11.72	302	42	"	"	III B	44.935	11 16 38.60	18 25 0.28	18 3159
134	9.3	37.2	39.4	41.2	43.0	45.5	a	18 11.43	303	4	10.5	9.5	I B	45.090	11 17 38.32	18 2 55.40	17 3364
135	9.0	15.0	17.3	19.4	21.6	23.7	c	18 19.40	303	4	"	"	III	50.725	11 17 46.29	17 57 53.90	17 3366
136	5.5	53.2	55.3	57.6	59.9	2.0	c	18 57.60	302	50	10.0	8.9	V	44.820	11 18 24.49	18 13 48.98	17 3367
137	9.4	37.3	39.5	41.5	43.4	45.2	e	21 11.49	304	12	10.0	9.2	VII	44.100	11 20 38.42	16 51 58.48	16 3247
138	8.7	40.8	42.9	45.2	47.2	49.4	c	24 45.10	304	16	10.5	9.6	III	43 990	11 24 12.05	16 47 59.61	16 3258
139	8.6	12.0	14.0	16.0	18.0	19.8	e	24 46.08	304	16	"	"	VII	42.690	11 24 13.03	16 48 25.09	16 3259
140	9.4	13.5	15.7	17.7	19.6	21.5	e	25 47.59	303	26	10.0	10.2	VII	44.520	11 25 14.53	−17 37 52.61	−17 3400
141	9.4	23.9	26.0	28.3	30.5	32.8	c	27 28.30	302	50	10.0	9.4	III	47.525	11 26 55.24	−18 12 56.89	−17 3405
142	8.9	6.5	8.7	10.8	13.0	15.1	c	28 10.82	302	50	"	"	V C	48.405	11 27 37.76	18 19 6.68	18 3198
143	9.3	40.7	42.8	45.0	49.4	51.0	c_3 d_2	28 40.68	302	50	"	"	V A	47.025	11 28 7.63	18 9 51.94	17 3409
144	9.3	30.0	32.1	34.4	36.6	38.8	c	29 34.38	302	50	"	"	V	44.950	11 29 1.33	18 13 46.77	17 3413
145	9.4	23.8	25.3	29.4	31.9	34.0	b_2 c_3	30 33.96	303	6	10.0	9.2	III A	44.900	11 30 0.92	17 54 31.90	17 3416
146	9.2	45.8	47.8	52.2	53.9	56.5	c_4 d_3	30 43.54	303	6	"	"	VI C	49.520	11 30 10.50	18 2 44.40	17 3417
147	9.1	52.2	54.3	56.5	58.8	0.9	c	31 56.54	303	22	10.0	9.1	V	43.390	11 31 23.51	17 42 15.19	17 3420
148	9.3	39.4	41.7	43.6	45.6	47.5	e	32 13.41	302	42	10.0	8.9	VII B	44.960	11 31 40.37	18 25 1.13	18 3208
149	9.0	41.6	43.9	46.2	48.4	50.6	c	33 46.14	302	42	"	"	III	43.240	11 33 13.11	18 22 20.11	18 3215
150	9.1	9.7	12.0	14.2	16.4	18.5	c	38 14.16	303	8	10.0	8.8	III A	40.380	11 37 41.17	−17 53 58.97	−17 3449
151	9.0	50.3	52.5	54.3	56.2	58.7	a	39 24.57	303	8	"	"	I B	40.350	11 38 51.58	−18 0 27.68	−17 3455
152	9.5	8.9	11.0	13.0	15.3	17.6	c	42 13.16	303	46	10.0	8.6	III	42.740	11 41 40.19	17 18 26.51	17 3469
153	8.0	46.6	48.7	50.9	53.1	55.4	c	42 50.94	303	14	9.4	8.0	V	46.090	11 42 17.97	17 49 24.92	17 3471
154	9.1	58.8	0.9	2.7	4.7	7.0	a	44 32.98	303	12	10.5	9.5	I C	48.150	11 44 0.03	17 57 10.62	17 3481
155	9.0	25.7	27.8	29.5	31.5	33.8	a	44 59.80	303	12	......	......	......	......	11 44 26.86	17 49 43	17 3482
156	8.9	20.4	22.5	24.7	26.9	29.0	c	45 24.70	303	28	......	......	......	......	11 44 51.76	17 36 35	17 3484
157	9.0	0.2	2.4	4.5	6.9	9.0	c	47 4.60	302	54	8.5	8.3	III B	41.450	11 46 31.67	18 14 8.93	17 3487
158	8.9	53.0	55.2	57.2	59.5	1.7	c	47 57.32	303	18	10.0	9.3	V	41.600	11 47 24.40	17 46 50.02	17 3490
159	9.1	44.1	46.2	48.3	50.6	52.7	c	48 48.38	302	52	9.7	8.2	V	42.415	11 48 15.46	18 12 36.54	17 3494
160	9.1	58.7	0.7	2.7	4.6	6.7	a	50 32.73	303	58	10.3	9.6	I	46.670	11 49 59.82	−17 5 9.31	−16 3354

Reduction Elements. Zone 107.

1895.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
April 11.3....	+0.111	+0.175	−0.213	+0.121	+0.175	−0.235
11.5....	+0.131		−0.257			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	4 Navis		*e* Navis		Lalande 16304		Lalande 17333		*γ* Crateris		*κ* Crateris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	306 44 10.35		298 26 10.05		308 46 9.60		302 40 9.60		303 56 9.25		309 16 10.05	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.405	5 5.79	46.535	6 5.60	42.895	4 55.96	44.310	5 23.60	43.780	5 12.77		4 34.75
II Red. to Mer......	.420	0.14	.570	0.22	.870	0.12	.380	0.18	.770	0.17	41.805	0.10
VI Inclination	.430		.545		.955		.375		.805		.820	−0.18
VII Refraction.......	.470	1 19.3	.550	1 49.1	.950	1 13.9	.370	1 32.7	.825	1 28.9	.810	1 13.3

	ζ Crateris		*η* Crateris	
	° ′ ″		° ′ ″	
CIRCLE READING.	303 16 8.40		304 28 10.25	
	r	′ ″	r	′ ″
I Microm. Eq......	45.195	5 40.38	45.035	5 37.13
II Red. to Mer......	.235	0.18	.050	0.16
VI Inclination	.260		.080	
VII Refraction.......	.250	1 31.2	.095	1 27.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
4 Navis............	7 41 53.92	11	+0.04	−46.35	306 47 57.0	34.6
e Navis............	7 53 7.77	11	0.00	−46.34	298 30 26.8	35.8
Lalande 16304.....	8 14 12.25	11	+0.05	−46.32	308 49 51.8	35.1
Lalande 17333.....	8 42 45.66	11	−0.02	−46.20	302 44 0.7	34.6
76 Draconis S. P......	8 50 52.64	6	−3.02	[−46.17]	58 54	....
γ Crateris..........	11 20 26.21	11	+0.02	−46.25	303 59 53.3	34.5
κ Crateris..........	11 22 40.25	11	+0.05	−46.25	309 19 31.4	32.6
γ Cephei S. P........	11 35 43.58	11	−1.82	[−46.33]	64 0	....
ζ Crateris..........	11 40 14.54	11	+0.02	−46.24	303 20 17.8	34.4
η Crateris..........	11 51 28.00	11	+0.03	−46.25	304 32 20.2	34.3

h		s
8.135............	*dt*	−46.302
	Hourly rate	+ 0.0158

Adopted Equator Point..........321° 6′ 34.49″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 37	30.316	48.0	45.9
8 38	30.316	45.8	43.4
9 45	30.324	44.3	42.4
10 49	30.340	43.2	41.3
11 53	30.351	41.8	40.2

Notes.

76 Draconis S. P. Image not very good.

75. Close double, mean observed. Magnitudes 9.2, 9.2.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
303	+0.020
304	0.025
305	0.030
306	0.035
307	+0.040

APPARENT RIGHT ASCENSION.	*A*=*α* to 1900.0					
	302°	303°	304°	305°	306°	307°
h m	s	s	s	s	s	s
8 0	......	+12.575	+12.676	+12.772	+12.869	+12.966
8 30	......	12.577	12.666	12.755	12.842	12.929
9 0	+12.526	12.607	12.686	12.764	12.841	......
9 30	12.600	12.667	12.735	12.801	......	......
10 0	......	12.758	12.814	12.865	......	......
10 30	......	12.879	12.918	12.957	12.995	13.033
11 0	12.996	13.023	13.047	13.072	+13.096	+13.120
11 30	13.181	13.190	13.200	13.210	......	......
12 0	+13.384	+13.379	+13.373	+13.367	......	......

APPARENT RIGHT ASCENSION.	*D*=Z. D. N. to 1895.0						*R*					
	302°	303°	304°	305°	306°	307°	302° 30′	303°	304°	305°	306°	307°
h m	″	″	″	″	″	″	″	″	″	″	″	″
8 0	.....	+ 8.05	+ 7.78	+ 7.50	+ 7.22	+ 6.93	93.26	91.50	88.13	84.90	81.85	78.92
8 30	.....	9.30	9.03	8.75	8.48	8.21	93.50	91.73	88.35	85.11	82.05	79.12
9 0	+10.75	10.50	10.24	9.99	9.72	.....	93.63	91.85	88.47	85.23	82.17	79.23
9 30	11.86	11.63	11.39	11.15	.....	.....	93.74	91.96	88.57	85.33	82.26	79.32
10 0	.....	12.71	12.49	12.27	.....	.....	93.84	92.07	88.67	85.43	82.36	79.41
10 30	.....	13.68	13.49	13.30	13.10	12.90	93.95	92.17	88.78	85.53	82.45	79.51
11 0	14.71	14.55	14.40	14.23	+14.07	+13.90	94.08	92.30	88.90	85.64	82.57	79.62
11 30	15.40	15.28	15.15	15.03	.....	.....	94.21	92.43	89.02	85.76	82.68	79.73
12 0	+15.97	+15.88	+15.80	+15.71	.....	.....	94.34	92.56	89.15	85.88	82.79	79.84

1895 APRIL 17. ZONE 108. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	......	26.6	28.7	30.8	33.1	35.2	c	35 30.88	306 54	10.0	11.3	III	47.660	8 34 55.32	—14 8 7.85	—13 2633
2	......	......	26.7	28.6	30.7	32.6	e	35 58.65	303 42	10.0	10.9	VII	44.900	8 35 22.80	17 21 10.38	17 2603
3	8.0	27.0	29.1	31.3	33.4	35.8	c	6 31.32	304 28	10.0	10.6	V	49.240	9 5 55.53	16 33 53.58	16 2703
4	8.7	44.6	46.7	48.8	51.1	53.2	c	7 48.88	304 28	“	“	III	46.840	9 7 13.09	16 34 39.61	16 2708
5	9.1	49.1	51.3	53.4	55.8	57.9	c	8 53.50	303 18	10.0	10.7	III B	43.760	9 8 17.62	17 48 56.20	17 2788
6	9.0	14.7	16.9	19.1	21.4	23.6	c	9 19.14	303 18	“	“	V	40.920	9 8 43.27	17 46 37.36	17 2790
7	8.6	29.7	31.9	34.1	36.4	38.6	c	14 34.14	304 16	10.0	11.4	III	45.330	9 13 58.35	16 47 10.50	16 2744
8	8.8	44.4	46.6	48.7	50.8	53.0	c	21 48.70	306 18	10.0	10.4	III	45.070	9 21 13.05	14 45 12.22	14 2851
9	9.0	7.5	9.7	11.8	14.1	16.1	c	23 11.84	305 40	10.0	10.6	III A	46.640	9 22 36.16	15 19 29.33	15 2803
10	9.1	23.0	25.2	27.2	29.4	31.6	c	23 27.28	305 40	“	“	V B	42.130	9 22 51.59	—15 27 24.64	-15 2804
11	8.2	46.2	48.3	50.5	52.6	54.8	c	24 50.48	305 40	“	“	III	45.850	9 24 14.79	—15 22 59.58	—15 2812
12	8.9	11.8	13.8	16.1	18.3	20.3	c	36 16.06	305 58	10.0	10.6	III	41.070	9 35 40.39	15 6 33.12	14 2915
13	8.8	21.7	23.8	26.1	28.2	30.4	c	41 26.02	306 6	10.0	9.7	III	43.515	9 40 50.37	14 57 47.43	14 2941
14	8.6	36.1	38.2	40.4	42.6	44.7	c	48 40.40	305 34	10.0	10.0	III A	44.360	9 48 4.73	15 26 19.31	15 2923
15	9.0	2.4	4.6	6.7	8.9	11.1	c	49 6.74	305 34	“	“	III	44.970	9 48 31.07	15 29 22.38	15 2924
16	9.3	6.9	9.1	11.1	13.3	15.5	c	50 11.18	305 34	“	“	III B	41.095	9 49 35.50	15 33 50.74	15 2927
17	9.0	43.4	45.5	47.7	49.6	51.5	e	50 17.85	305 34	“	“	V B	43.800	9 49 42.17	15 32 59.11	15 2928
18	8.4	55.5	57.5	59.7	1.9	4.1	c	7 59.74	305 22	10.0	10.6	III	46.020	10 7 24.07	15 41 6.05	15 3000
19	9.1	43.2	45.4	47.6	49.7	51.8	c	12 47.54	305 14	10.0	9.2	III	45.940	10 12 11.88	15 49 9.48	15 3022
20	8.9	41.6	43.6	45.5	47.2	49.7	a	21 15.22	306 8	10.0	9.9	I	42.020	10 20 39.62	—14 56 22.70	-14 3117
21	8.6	31.2	33.3	35.2	37.1	39.3	a	22 5.26	303 54	10.0	9.5	I B	40.080	10 21 29.55	—17 14 20.47	—17 3146
22	8.8	......	43.6	45.7	47.5	49.7	a	22 15.67	303 54	“	“	III B	50.290	10 21 39.96	17 11 5.00	16 3056
23	8.9	19.5	21.7	26.0	27.5	30.2	c_4 d_3	22 17.32	303 54	“	“	VI C	44.325	10 21 41.61	17 16 12.12	17 3147
24	8.7	6.5	8.6	10.7	12.6	14.4	e	22 40.64	303 54	“	“	VII A	45.630	10 22 4.93	17 6 6.07	16 3057
25	9.1	44.7	46.7	48.5	50.3	52.8	a	27 18.43	305 10	10.0	9.8	I	45.750	10 26 42.78	15 53 14.69	15 3072^1
26	9.2	14.7	16.8	18.8	21.0	23.2	c	27 18.90	305 10	“	“	III	45.860	10 26 43.26	15 53 13.15	15 3072^2
27	5.	13.9	16.1	18.2	20.4	22.6	c	34 18.24	304 48	10.0	9.4	III C	46.700	10 33 42.60	16 21 25.96	16 3100
28	9.1	7.4	9.5	11.8	13.9	16.0	c	35 11.72	304 48	“	“	III A	42.000	10 34 36.08	16 13 14.82	15 3099
29	9.1	20.8	22.8	24.8	26.7	29.1	a	37 54.81	304 22	10.0	8.9	I C	45.580	10 37 19.16	16 47 49.43	16 3108
30	9.0	52.5	54.8	57.1	59.2	1.4	c	37 57.00	304 22	“	“	III B	48.310	10 37 21.36	—16 43 44.09	—16 3109
31	9.3	57.0	59.1	1.4	3.6	5.7	c	39 1.36	304 22	“	“	III A	48.210	10 38 25.71	—16 37 17.64	—16 3114
32	9.2	8.6	11.0	13.1	15.2	17.3	c	39 13.04	304 22	“	“	V	50.170	10 38 37.39	16 39 55.10	16 3115
33	9.1	17.7	19.7	21.9	23.9	25.7	e	39 52.16	306 6	10.0	10.5	V B	42.810	10 39 16.58	15 1 24.43	14 3171
34	8.9	13.3	15.4	17.3	19.1	21.6	a	41 47.04	306 6	“	“	I	43.865	10 41 11.46	14 57 49.85	14 3174
35	9.0	38.8	41.0	42.8	44.8	47.1	a	42 12.61	306 6	“	“	I C	48.070	10 41 37.03	15 2 56.46	14 3178
36	8.7	16.9	19.1	21.2	23.3	25.4	c	42 21.18	306 6	“	“	III	40.920	10 41 45.60	14 58 46.97	14 3179
37	8.7	18.8	20.8	22.7	24.6	26.8	a	43 52.33	306 56	10.0	9.3	I ( )	43.910	10 43 16.79	14 7 47.61	13 3219
38	8.8	48.1	50.3	52.5	54.6	56.9	c	43 52.48	306 56	“	“	III	48.430	10 43 16.94	14 6 21.41	13 3218
39	9.4	37.8	39.8	42.0	44.2	46.4	c	46 42.04	305 10	10.0	9.5	III C	47.865	10 46 6.44	15 59 3.99	15 3142
40	8.5	13.5	15.8	17.9	20.1	22.3	c	47 17.92	305 10	“	“	V	48.650	10 46 42.33	—15 52 22.61	—15 3144
41	8.6	35.3	37.4	39.6	41.9	43.9	c	48 39.62	305 10	“	“	III A	42.450	10 48 4.04	—15 51 6.69	—15 3153
42	8.8	2.6	4.9	6.9	9.1	11.2	c	51 6.94	306 20	10.0	9.2	III	42.650	10 50 31.40	14 44 14.75	14 3224
43	8.3	21.3	23.4	25.5	27.7	29.8	c	52 25.54	304 10	10.0	9.6	III	41.020	10 51 49.93	16 54 52.10	16 3152
44	8.6	29.7	32.0	34.2	36.3	38.4	c	55 34.12	304 18	10.0	9.4	III	41.000	10 54 58.52	16 46 52.50	16 3164
45	8.8	33.0	35.1	37.0	38.8	41.2	a	57 6.92	304 42	10.0	9.7	I	41.925	10 56 31.33	16 22 33.00	16 3171
46	8.7	3.8	5.9	8.2	10.4	12.6	c	57 8.18	304 42	“	“	III B	46.200	10 56 32.59	16 24 25.33	16 3172
47	8.9	49.7	51.9	54.1	56.2	58.4	c	57 54.06	305 40	10.0	10.3	III	44.780	10 57 18.51	15 23 35.80	15 3181
48	8.9	6.4	8.5	10.7	12.9	15.0	c	59 10.70	305 40	“	“	III A	41.490	10 58 35.15	15 21 24.34	15 3187
49	9.0	7.1	9.2	11.0	12.8	15.2	a	1 40.84	305 40	“	“	I C	45.105	11 1 5.30	15 29 56.59	15 3193
50	8.8	44.3	46.3	48.6	50.9	52.8	c	1 48.58	305 40	“	“	III B	45.130	11 1 13.04	—15 26 43.19	—15 3194
51	9.0	24.4	26.4	28.5	30.8	32.9	c	3 28.60	305 40	“	“	III C	47.230	11 2 53.07	—15 29 15.98	—15 3203
52	8.6	49.8	51.9	54.1	56.2	58.4	c	3 54.08	305 40	“	“	III B	50.130	11 3 18.55	15 25 7.41	15 3206
53	9.0	42.4	44.3	46.1	48.0	50.2	a	6 15.82	306 44	10.0	10.0	I B	46.960	11 5 40.32	14 22 5.27	14 3276
54	9.0	30.3	32.3	34.1	36.0	38.4	a	7 3.85	306 44	“	“	I C	45.290	11 6 28.35	14 25 50.73	14 3277
55	9.1	18.5	20.5	22.6	24.8	27.0	c	7 22.68	306 44	“	“	III A	41.265	11 6 47.19	14 17 26.59	14 3279
56	9.0	49.2	51.4	53.6	55.7	57.9	c	7 53.56	304 10	10.0	9.9	V B	49.880	11 7 18.00	16 55 17.31	16 3201
57	9.1	50.8	52.9	55.1	57.3	59.5	c	8 55.12	304 10	“	“	III	51.155	11 8 19.57	16 51 38.88	16 3207
58	9.3	13.4	15.4	17.7	20.0	22.1	c	9 17.72	304 10	“	“	V C	45.740	11 8 42.17	16 59 49.42	16 3208
59	8.9	47.1	49.3	51.4	53.8	55.8	c	9 51.48	304 10	“	“	V	48.850	11 9 15.93	16 52 23.54	16 3211
60	8.9	50.9	53.1	55.3	57.4	59.6	c	10 55.26	304 10	“	“	III B	44.980	11 10 19.71	—16 56 51.34	—16 3215
61	9.5	40.1	42.1	44.3	46.5	48.6	c	12 44.32	304 18	10.0	10.1	III B	45.830	11 12 8.78	—16 48 34.63	—16 3220
62	8.8	6.5	8.6	10.3	12.3	14.6	a	13 40.42	304 18	“	“	I	45.760	11 13 4.88	16 45 21.67	16 3222
63	8.8	52.5	54.8	56.9	59.2	1.3	c	13 56.94	305 4	10.0	10.8	III	42.680	11 13 21.42	16 0 18.76	15 3238
64	......	51.6	53.7	55.9	58.1	0.2	c	14 55.90	306 50	10.0	10.3	III	42.630	11 14 20.42	14 14 15.14	13 3345
65	8.9	40.8	42.9	45.1	47.3	49.4	c	15 45.10	306 50	“	“	V	45.870	11 15 9.62	-14 13 13.39	—13 3347

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
66	9.3	24.3	26.5	28.5	30.7	32.8	c	16 28.56	306 50 10.0 10.3	V B	43.795	11 15 53.08	−14 17 6.92	−14 3307
67	9.0	33.9	35.8	37.7	39.6	42.0	a	18 7.63	305 14 10.0 9.6	I	44.680	11 17 32.14	15 49 40.20	15 3254
68	8.8	13.4	15.4	17.6	19.7	22.0	c	18 17.62	305 26 10.0 9.5	III	46.610	11 17 42.13	15 37 3.00	15 3255
69	9.5	29.8	31.7	33.6	35.6	37.9	a	21 3.51	305 26 10.0 9.6	I	46.490	11 20 28.03	15 37 5.03	15 3263
70	9.6	46.1	48.1	50.0	51.9	54.2	a	21 19.84	305 26 " "	III A	40.445	11 20 44.36	−15 35 46.92	−15 3264
71	8.9	31.7	33.8	35.8	38.1	40.1	c	21 35.90	306 40 10.0 10.6	V	43.600	11 21 0.44	−14 23 57.56	−14 3321
72	8.6	40.3	42.5	44.6	46.8	48.8	c	22 44.60	305 58 10.0 10.0	III	44.905	11 22 9.13	15 5 34.42	14 3326
73	9.0	20.1	22.2	24.4	26.6	28.7	c	23 24.40	305 46 10.0 10.9	III	41.760	11 22 48.93	15 18 34.90	15 3270
74	8.6	21.9	24.1	26.1	28.5	30.6	c	24 26.24	304 58 10.0 9.9	III A	44.170	11 23 50.76	16 2 36.79	15 3275
75	9.3	1.9	4.1	6.2	8.5	10.5	c	25 6.24	304 58 " "	V C	43.920	11 24 30.76	16 12 22.90	15 3278
76	9.1	......	46.1	47.9	50.0	52.1	a	27 18.04	304 4 10.0 9.7	I	43.310	11 26 42.55	17 0 10.32	16 3270
77	9.4	10.1	12.3	14.1	15.9	18.3	a	27 44.15	304 4 " "	I C	45.380	11 27 8.66	17 5 57.93	16 3274
78	9.3	41.0	43.4	45.1	47.0	49.3	a	28 15.15	304 4 " "	I A	48.160	11 27 39.67	16 55 22.83	16 3275
79	6.5	43.3	45.5	47.7	49.9	52.0	c	28 47.68	305 18 10.0 10.4	III A	40.950	11 28 12.22	15 43 37.55	15 3295
80	9.0	29.4	31.1	35.2	37.4	39.5	b_2 c_3	29 39.55	305 18 " "	III B	38.245	11 29 4.09	−15 50 57.97	−15 3298
81	8.7	18.0	20.1	22.2	24.1	25.9	(e)	29 52.45	306 6 10.0 9.2	V	44.890	11 29 17.00	−14 57 35.38	−14 3349
82	9.0	35.6	37.8	39.8	41.8	43.6	e	30 10.10	306 6 " "	VII B	43.710	11 29 34.65	15 1 11.77	14 3350
83	9.5	4.1	6.0	7.8	9.6	11.9	a	31 37.59	306 6 " "	III B	44.590	11 31 2.15	15 0 54.62	14 3358
84	8.2	28.3	30.5	32.6	34.4	36.3	e	32 2.62	304 42 10.0 10.7	V A	47.190	11 31 27.16	16 17 39.63	16 3290
85	9.0	3.4	5.5	7.5	9.7	11.9	c	33 7.60	304 42 " "	V	41.800	11 32 32.14	16 22 38.05	16 3293^1
86	9.1	33.4	35.6	37.5	39.6	41.4	e	33 7.69	304 42 " "	VII	42.575	11 32 32.23	16 22 23.34	16 3293^2
87	8.9	38.2	40.2	44.5	46.2	48.6	c_4 d_3	34 35.99	306 44 10.0 10.9	VI	48.060	11 34 0.56	14 18 32.24	14 3372
88	9.0	20.4	22.7	24.6	26.5	28.4	e	34 55.00	306 44 " "	VII	42.940	11 34 19.57	14 20 10.56	14 3375
89	9.3	18.8	21.0	23.1	25.4	27.5	c	36 23.16	306 14 10.0 10.7	III	44.320	11 35 47.74	14 49 45.01'	14 3378
90	9.1	50.9	53.0	55.0	56.9	58.8	e	36 25.34	306 14 " "	V	48.080	11 35 49.92	−14 48 33.23	−14 3379
91	9.4	46.9	49.2	51.3	53.1	54.9	e	37 21.51	306 24 10.0 10.0	VII	43.150	11 36 46.09	−14 40 7.94	−14 3381
92	9.3	16.6	18.7	20.7	22.4	24.6	e	37 51.04	306 24 " "	VII	46.140	11 37 15.62	14 39 10.56	14 3383
93	9.1	13.4	15.5	17.6	19.5	21.4	e	38 47.82	305 42 10.0 9.7	VII	46.490	11 38 12.41	15 21 5.94	15 3340
94	9.1	57.5	59.8	1.9	4.1	6.2	c	42 1.90	306 42 10.0 10.0	III	41.735	11 41 26.50	14 22 33.82	14 3402
95	8.6	19.1	21.3	23.4	25.6	27.7	c	43 23.42	306 8 10.0 10.5	III	48.590	11 42 48.02	14 54 23.56	14 3406
96	9.2	17.4	19.6	21.7	23.9	25.9	c	44 21.70	306 8 " "	V B	41.975	11 43 46.30	14 59 44.55	14 3414
97	9.0	6.5	8.5	10.7	12.9	15.1	c	45 10.74	306 12 10.0 10.4	V	43.450	11 44 35.34	14 52 2.46	14 3415
98	8.2	46.8	48.8	50.7	52.5	54.9	a	46 20.43	306 12 " "	I A	39.810	11 45 45.04	14 49 56.95	14 3418
99	8.5	26.4	28.5	30.6	32.8	35.0	c	46 30.66	306 50 10.0 10.1	III A	42.280	11 45 55.27	14 11 8.27	13 3455
100	8.7	11.5	13.5	15.7	17.9	20.0	c	48 15.72	306 50 " "	III B	43.925	11 47 40.34	−14 17 5.18	−14 3424
101	9.2	13.6	15.7	17.9	20.1	22.1	c	49 17.88	306 50 " "	III B	43.140	11 48 42.50	−14 17 20.25	−14 3429
102	9.1	2.6	4.5	6.4	8.2	10.5	a	51 36.03	306 56 10.0 9.7	I	45.825	11 51 0.66	14 7 14.32	13 3474
103	9.1	19.7	21.9	23.7	25.6	27.8	a	51 53.33	306 56 " "	I	41.200	11 51 17.96	14 8 43.07	13 3476
104	8.9	54.5	56.7	58.9	1.1	3.1	c	51 58.86	306 56 " "	III	41.150	11 51 23.49	14 8 44.57	13 3477
105	9.1	10.6	12.6	14.7	17.1	19.3	c	53 14.86	305 34 10.0 9.6	III	41.120	11 52 39.50	15 30 48.98	15 3388
106	8.0	57.6	59.9	2.1	4.2	6.4	c	54 2.04	306 30 10.0 11.0	III	44.880	11 53 26.68	14 33 33.52	14 3438
107	8.7	41.0	43.2	45.1	47.1	48.8	e	54 15.53	306 46 10.0 10.8	VII	42.110	11 53 40.17	14 18 26.59	14 3439
108	9.2	37.6	39.8	41.9	44.1	46.1	c	55 41.90	306 10 10.0 9.9	III A	39.200	11 55 6.54	14 52 9.28	14 3442
109	9.4	49.1	51.2	53.3	55.5	57.6	c	56 53.34	306 10 " "	III B	40.520	11 56 17.99	14 58 12.40	14 3448
110	9.3	32.7	34.8	37.0	39.3	41.3	c	57 37.02	305 54 10.0 10.1	III	46.635	11 57 1.67	−15 9 1.91	−14 3451
111	8.7	30.3	32.4	34.7	36.9	39.0	c	58 34.66	305 10 10.0 8.6	III	43.870	11 57 59.30	−15 53 57.79	−15 3405
112	8.8	28.9	31.0	33.2	35.4	37.4	c	59 33.18	306 20 10.0 10.1	III	44.875	11 58 57.83	14 43 34.44	14 3454
113	9.0	13.5	15.7	17.8	20.1	22.1	c	1 17.84	306 58 10.0 10.0	III	43.675	12 0 42.49	14 5 55.73	13 3487
114	8.8	30.1	32.1	33.9	35.7	38.1	a	3 3.59	306 46 10.0 10.5	I	43.020	12 2 28.25	14 18 8.05	14 3460
115	9.1	49.7	52.1	53.9	55.8	58.1	a	3 23.82	304 42 10.0 10.6	III	42.995	12 2 48.49	16 22 14.89	16 3393
116	8.9	......	41.1	45.4	47.0	49.5	c_5 d_3	3 36.85	306 30 10.0 10.5	V	43.610	12 3 1.52	14 33 58.32	14 3462
117	9.3	34.1	36.1	38.4	40.5	42.7	c	12 38.36	306 24 10.0 9.4	V	41.065	12 12 3.07	14 40 47.69	14 3484
118	9.0	22.6	24.8	27.0	29.1	31.2	c	13 26.94	306 40 10.0 10.5	V	46.160	12 12 51.65	14 23 8.60	14 3486
119	8.8	13.3	15.5	17.3	19.3	21.3	e	13 47.72	306 2 10.0 10.7	V	42.600	12 13 12.44	15 2 17.55	14 3488
120	8.8	18.2	20.5	22.5	24.7	26.9	c	15 22.56	306 34 10.0 9.4	III	42.170	12 14 47.27	−14 30 25.54	−14 3493

Reduction Elements. Zone 108.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 17.3....	+0.075	+0.140	−0.089	+0.062	+0.131	−0.092
17.5....	+0.049	+0.122	−0.094			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		20 Navis		Lalande 16304		Lalande 17333		Piazzi VIII. 227		ζ Crateris		ε Corvi	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	305 34 10.45		308 46 10.50		302 40 10.25		305 18 10.05		303 16 10.05		299 0 9.30	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	44.020	5 17.58	42.710	4 52.92	44.125	5 20.04	45.180	5 40.00		5 36.69	45.420	5 44.12
II	Red. to Mer	.025	0.15	.735	0.12	.150	0.18	.225	·0.16		0.18	.430	0.22
VI	Inclination	.070		.790		.210		.220		45.070	—0.45	.450	
VII	Refraction	.070	1 20.6	.805	1 11.9	.210	1 30.2	.235	1 21.8	.015	1 29.1	.415	1 45.3

		γ Corvi		Piazzi XII. 54	
		° ′ ″		° ′ ″	
	CIRCLE READING.	304 4 9.40		308 4 9.95	
		r	′ ″	r	′ ″
I	Microm. Eq.	46.380	6 3.21		4 23.35
II	Red. to Mer.	.435	0.17	41.210	0.11
VI	Inclination	.440		.215	—0.18
VII	Refraction	.445	1 26.5	.225	1 14.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
20 Navis	8 9 19.85	11	+0.06	—48.64	305 38 7.6	34.6
Lalande 16304	8 14 14.49	11	+0.07	—48.65	308 49 51.6	34.9
Lalande 17333	8 42 47.97	11	+0.06	—48.63	302 44 0.3	34.5
76 Draconis S. P.	8 50 54.49	11	−1.52	[—48.60]	58 54	....
Piazzi VIII. 227	8 54 37.95	11	+0.06	—48.58	305 22 28.4	34.5
ζ Crateris	11 40 17.03	10	+0.06	—48.78	303 20 17.4	34.5
ε Corvi	12 5 34.08	11	+0.05	—48.74	299 4 8.3	34.1
4 H. Draconis	12 8 13.84	7	+1.08	[—48.74]	39 16	....
γ Corvi	12 11 15.05	11	+0.06	—48.76	304 8 46.3	34.7
Piazzi XII. 54	12 16 21.14	11	+0.07	—48.75	308 7 18.4	34.1

h 8.505	*dt*	s —48.625
	Hourly rate	— 0.0375
	Adopted Equator Point	° ′ ″ 321 6 34.49

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
8 5	29.765	52.0	49.3
9 10	29.776	48.9	46.5
10 15	29.784	46.2	44.5
11 20	29.775	44.0	42.9
12 15	29.771	43.2	42.1

Note.

20 Navis. Images steady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			303°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	s
303	+0.059	8 30	+12.655	+12.745	+12.834	+12.919	+13.005	......
304	0.062	9 0	12.680	12.758	12.835	12.912	12.988	......
305	0.065	9 30	12.732	12.797	12.863	12.927	12.992	......
306	0.067	10 0	12.810	12.864	12.917	12.969	13.020	......
307	0.070	10 30	+12.916	12.956	12.993	13.030	13.069	+13.106
308	+0.073	11 0	......	13.069	13.094	13.117	13.140	13.163
		11 30	......	13.206	13.215	13.224	13.232	13.239
		12 0	......	13.360	13.354	13.348	13.342	13.335
		12 30	......	+13.532	+13.510	+13.491	+13.469	+13.449

APPARENT RIGHT ASCENSION.	$D =$ Z. D. N. to 1895.0						R					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
8 30	+ 9.47	+ 9.19	+ 8.91	+ 8.63	+ 8.34	.....	89.21	85.92	82.78	79.80	76.95	75.56
9 0	10.78	10.51	10.23	9.96	9.68	.....	89.47	86.18	83.02	80.04	77.18	75.79
9 30	12.04	11.78	11.52	11.26	10.99	.....	89.68	86.38	83.21	80.22	77.36	75.96
10 0	13.19	12.95	12.72	12.47	12.22	.....	89.87	86.56	83.39	80.39	77.52	76.12
10 30	+14.23	14.03	13.81	13.58	13.36	+13.13	90.01	86.70	83.52	80.52	77.64	76.24
11 0	.....	14.98	14.79	14.60	14.40	14.20	90.16	86.84	83.66	80.65	77.77	76.37
11 30	.....	15.79	15.63	15.47	15.31	15.14	90.26	86.94	83.75	80.74	77.86	76.45
12 0	.....	16.46	16.33	16.21	16.08	15.94	90.32	87.00	83.81	80.80	77.91	76.51
12 30	.....	+16.95	+16.86	+16.77	+16.68	+16.59	90.41	87.08	83.89	80.87	77.98	76.58

1895 APRIL 18. ZONE 109. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.		CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0			δ 1900.0			B. D.	
		s	s	s	s	s		m	s	°	′	″	″		r	h	m	s	°	′	″	°	
1	9.1	55.4	57.3	59.3	1.2	3.6	a	50	29.39	303	54	10.0	8.6	I	47.530	9	49	53.25	−17	8	38.86	−16	2918
2	8.7	43.0	45.0	47.2	49.4	51.6	c	50	47.24	304	46	10.0	8.5	III	46.315	9	50	11.15	16	17	0.36	16	2919
3	9.2	14.9	17.2	19.0	20.9	23.2	a	34	49.05	304	4	10.0	9.2	I B	41.645	10	34	13.09	17	3	48.17	16	3102
4	8.6	47.6	49.9	52.0	54.2	56.4	c	34	52.02	304	4	"	"	III B	43.090	10	34	16.06	17	3	20.90	16	3103
5	9.1	36.8	39.1	41.3	43.4	45.7	c	35	41.26	304	4	"	"	III A	39.530	10	35	5.31	16	58	0.82	16	3104
6	9.0	11.6	13.8	16.0	18.2	20.3	c	37	15.98	304	4	"	"	III	42.465	10	36	40.03	17	0	19.40	16	3107
7	8.7	18.3	20.5	22.7	24.9	27.0	c	38	22.68	304	4	"	"	III B	45.040	10	37	46.74	17	2	43.90	16	3112
8	8.9	54.6	56.7	58.8	1.0	3.2	c	40	58.86	304	16	10.0	9.0	III C	45.250	10	40	22.92	16	53	52.66	16	3121
9	6.	29.6	31.9	34.0	36.2	38.3	c	42	34.00	304	16	"	"	III	49.180	10	41	58.07	16	46	10.67	16	3124
10	9.0	47.8	50.1	52.1	54.5	56.5	c	42	52.20	304	16	"	"	V C	45.440	10	42	16.27	−16	53	49.06	−16	3127
11	9.3	39.5	41.6	43.7	46.0	48.1	c	43	43.78	304	16	"	"	III B	49.160	10	43	7.85	−16	49	25.00	−16	3129
12	9.1	6.7	8.8	11.2	13.4	15.4	c	44	11.10	304	16	"	"	V A	44.255	10	43	35.18	16	44	30.81	16	3130
13	9.0	47.0	49.2	51.3	53.6	55.8	c	45	51.38	304	16	"	"	III	43.780	10	45	15.46	16	47	54.68	16	3134
14	8.2	46.4	48.5	50.4	52.2	54.6	a	48	20.35	304	38	10.0	8.4	I B	41.890	10	47	44.45	16	29	43.80	16	3140
15	8.8	11.0	13.0	14.9	16.8	19.1	a	48	44.87	304	38	"	"	I A	39.490	10	48	8.97	16	24	1.57	16	3143
16	8.7	16.2	18.4	20.5	22.7	25.0	c	49	20.56	304	48	10.0	8.7	III	41.005	10	48	44.67	16	16	46.93	16	3144
17	9.1	55.4	57.5	59.6	1.9	4.1	c	49	59.70	304	48	"	"	III	48.380	10	49	23.81	16	14	25.48	16	3145
18	8.7	46.1	48.3	50.4	52.6	54.7	c	50	50.42	304	48	"	"	V	44.050	10	50	14.53	16	15	49.03	16	3149
19	8.1	22.7	25.0	27.1	29.3	31.4	c	51	27.10	305	14	10.0	8.4	V	42.490	10	50	51.23	15	50	17.93	15	3162
20	8.9	4.9	7.1	9.2	11.4	13.6	c	59	9.24	305	24	10.0	8.7	III	48.700	10	58	33.39	−15	38	18.50	−15	3186
21	8.5	19.0	21.2	23.4	25.5	27.7	c	0	23.36	305	24	"	"	III B	45.390	10	59	47.51	−15	42	35.92	−15	3189
22	8.8	23.7	25.8	28.1	30.2	32.3	c	1	28.02	305	24	"	"	III B	40.820	11	0	52.17	15	44	3.70	15	3192
23	9.0	55.9	58.1	0.3	2.4	4.5	c	3	0.24	305	24	"	"	III	39.630	11	2	24.40	15	41	12.89	15	3201
24	8.6	41.9	44.1	46.2	48.5	50.6	c	6	46.26	304	28	10.0	8.2	III	45.560	11	6	10.41	16	35	22.32	16	3200
25	9.0	40.7	42.7	44.6	46.4	48.9	a	8	14.72	303	48	10.0	7.4	III (C)	47.935	11	7	38.85	17	21	5.97	17	3322
26	9.1	13.1	14.7	18.8	21.1	23.1	b_2 c_3	8	23.23	303	48	"	"	III	47.360	11	7	47.37	17	14	50.28	17	3324
27	8.3	10.0	12.2	14.2	16.1	17.9	e	8	44.22	304	22	10.0	7.6	VII	41.380	11	8	8.37	16	42	43.77	16	3206
28	8.7	13.4	15.5	17.7	20.0	22.1	c	10	17.74	304	26	10.0	8.1	V	43.480	11	9	41.90	16	38	2.99	16	3214
29	9.2	11.8	14.0	16.2	18.4	20.5	c	11	16.18	305	18	10.0	7.9	V B	46.480	11	10	40.36	15	48	16.74	15	3226
30	8.8	43.0	45.2	47.3	49.3	51.1	e	11	17.46	305	18	"	"	VII B	45.930	11	10	41.64	−15	48	27.37	−15	3227
31	9.1	42.1	44.3	46.5	48.7	50.8	c	12	46.48	305	18	"	"	III	47.010	11	12	10.66	−15	44	52.64	−15	3231
32	8.7	40.5	42.5	44.9	47.1	49.2	c	13	44.84	304	2	10.0	8.5	III	44.320	11	13	9.01	17	1	47.70	16	3223
33	9.4	5.7	7.9	10.1	12.3	14.4	c	14	10.08	304	2	"	"	V B	41.745	11	13	34.25	17	5	51.20	16	3225
34	9.3	7.6	9.8	11.9	14.1	16.2	c	15	11.92	304	8	10.0	8.1	V	38.915	11	14	36.09	16	57	31.80	16	3229
35	8.9	57.4	59.5	1.7	3.9	6.2	c	16	1.74	304	8	"	"	III	44.760	11	15	25.92	16	55	39.31	16	3232
36	9.2	27.5	29.7	31.8	34.0	36.3	c	16	31.86	302	54	10.0	8.0	V	42.010	11	15	56.01	18	10	36.37	17	3359
37	8.8	39.9	42.0	44.1	46.4	48.5	c	17	44.18	303	48	10.0	8.5	III	41.705	11	17	8.36	17	16	38.86	17	3363
38	8.9	13.4	15.6	17.8	20.1	22.2	c	18	17.82	303	22	10.0	8.5	V A	40.050	11	17	41.98	17	39	57.42	17	3365
39	8.6	5.2	7.4	9.6	11.8	13.9	c	19	9.58	303	22	"	"	III B	40.490	11	18	33.75	17	46	17.40	17	3368
40	8.7	12.1	14.3	16.2	18.3	20.2	e	19	46.07	302	38	10.0	7.5	VII	44.875	11	19	10.22	−18	25	42.85	−18	3167
41	7.9	17.0	19.2	21.1	23.1	25.0	e	20	50.99	303	0	10.0	8.2	VII	45.645	11	20	15.15	−18	3	26.59	−17	3372
42	8.6	49.7	52.1	54.2	56.4	58.6	c	21	54.20	303	30	10.0	8.4	V	47.850	11	21	18.37	17	32	42.67	17	3379
43	8.7	48.4	50.4	52.4	54.2	56.6	a	23	22.50	303	30	"	"	I B	47.150	11	22	46.68	17	36	8.98	17	3388
44	8.8	39.9	42.1	44.3	46.5	48.8	c	23	44.32	302	46	10.0	8.4	V	41.890	11	23	8.49	18	18	39.29	18	3182
45	8.9	14.8	17.0	19.1	21.0	23.8	e	23	49.17	305	0	10.0	8.2	VII	43.990	11	23	13.38	16	3	52.43	15	3273
46	8.5	27.8	29.9	32.1	34.4	36.5	c	25	32.14	303	50	10.0	8.4	III	46.730	11	24	56.34	17	13	2.77	16	3262
47	8.6	0.4	2.6	4.5	6.4	8.3	e	25	34.47	303	50	"	"	VII C	45.030	11	24	58.66	17	20	1.63	17	3398
48	9.0	23.2	25.3	27.3	29.3	31.2	e	25	57.32	303	50	"	"	VII	47.745	11	25	21.53	17	12	43.83	16	3265
49	9.4	52.6	54.8	56.9	59.2	1.4	c	26	56.98	303	50	"	"	V	44.700	11	26	21.19	17	13	42.13	16	3269
50	8.3	32.5	34.7	36.8	39.1	41.2	c	29	36.86	305	36	10.0	7.8	III B	48.625	11	29	1.10	−15	29	35.48	−15	3297
51	9.5	20.9	23.2	25.3	27.5	29.5	c	30	25.28	305	36	"	"	III A	43.920	11	29	49.53	−15	24	37.32	−15	3302
52	8.8	50.4	52.6	54.8	56.9	59.0	c	30	54.74	305	36	"	"	V C	48.160	11	30	18.99	15	32	57.23	15	3303
53	8.9	2.1	4.3	6.4	8.6	10.8	c	34	6.44	304	58	10.0	8.5	III C	42.590	11	33	30.69	16	12	45.84	15	3317
54	8.7	33.8	35.9	38.1	40.3	42.4	c	34	38.10	304	58	"	"	III A	41.135	11	34	2.35	16	3	32.33	15	3320
55	8.0	18.4	20.6	22.8	25.1	27.1	c	35	22.80	304	58	"	"	V A	39.820	11	34	47.05	16	3	57.75	15	3323
56	8.9	9.1	11.1	13.0	14.9	17.1	a	36	42.91	304	58	"	"	I	38.230	11	36	7.17	16	7	42.29	15	3330
57	9.0	1.3	3.3	5.2	7.1	9.4	a	37	35.18	304	32	10.0	7.9	I A	46.770	11	36	59.44	16	27	45.52	16	3308
58	8.9	23.2	25.3	27.5	29.7	31.9	c	43	27.52	304	4	9.8	7.0	III	49.300	11	42	51.81	16	58	14.02	16	3327
59	9.0	21.4	23.8	25.8	28.1	30.1	c	44	25.84	304	32	10.0	7.6	V B	42.470	11	43	50.13	16	35	37.39	16	3330
60	9.3	5.0	7.2	9.3	11.5	13.6	c	45	9.32	304	32	"	"	III B	39.070	11	44	33.61	−16	36	42.38	−16	3334
61	9.2	48.2	50.4	52.5	54.4	56.3	e	45	22.53	304	32	"	"	V A	38.920	11	44	46.83	−16	30	16.91	−16	3335
62	9.2	18.2	20.4	22.5	24.7	26.9	c	46	22.54	304	32	"	"	III C	40.935	11	45	46.83	16	39	19.58	16	3338
63	9.0	11.3	13.4	15.6	17.9	19.9	c	47	15.62	305	18	10.0	7.9	V C	47.495	11	46	39.92	15	51	11.09	15	3369
64	8.8	59.5	1.6	3.4	5.2	7.5	a	48	33.25	305	18	"	"	I	48.990	11	47	57.55	15	44	15.27	15	3374
65	......	38.4	40.6	42.6	44.9	47.0	c	48	42.70	306	0	10.0	7.5	....	....	11	48	7.01	15	7	4	14	3427
66	9.3	6.2	8.4	10.5	12.7	14.9	(c)	49	10.54	306	0	"	"	VI	47.350	11	48	34.85	15	2	46.04	14	3428
67	9.3	33.6	35.9	38.0	39.9	41.7	e	50	7.99	304	32	10.0	8.1	VII	49.300	11	49	32.30	16	30	12.56	16	3352
68	6.	26.5	28.5	30.8	32.9	35.1	c	51	30.76	304	32	"	"	V B	42.410	11	50	55.08	16	35	38.32	16	3358
69	8.9	5.8	7.8	9.8	11.7	13.7	e	52	40.16	306	8	10.0	8.1	VII	49.330	11	52	4.49	14	54	7.44	14	3436
70	9.5	48.8	50.7	55.2	56.8	59.4	c_4 d_3	58	46.56	304	58	10.0	7.5	VI B	39.190	11	58	10.91	−16	10	39.12	−15	3406

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
71	9.0	5.1	7.2	9.3	11.4	13.7	c	0 9.34	304 58 10.0 7.5	III B 43.575	11 59 33.69	−16 9 14.63	−15 3409
72	8.9	7.4	9.6	11.7	13.9	16.0	c	1 11.72	305 6 10.0 7.8	III 44.135	12 0 36.07	15 57 49.54	15 3415
73	8.7	53.0	55.1	56.8	58.8	1.2	a	3 26.97	304 8 10.0 7.5	I 42.560	12 2 51.34	16 56 22.19	16 3394
74	9.4	56.2	58.3	0.4	2.6	4.6	c	4 0.42	304 30 10.0 7.6	III C 45.420	12 3 24.79	16 39 53.46	16 3395
75	8.6	10.8	13.1	15.3	17.6	19.7	c	4 15.30	304 30 " "	V B 48.060	12 3 39.67	16 35 50.08	16 3396
76	9.0	15.2	17.5	19.6	21.8	24.0	c	5 19.62	304 30 " "	III 50.540	12 4 43.99	16 31 48.38	16 3401
77	8.8	51.9	54.1	56.3	58.5	0.7	c	5 56.30	304 30 " "	III C 47.570	12 5 20.68	16 39 12.12	16 3405
78	9.3	17.7	19.8	21.9	24.0	26.4	c	7 21.96	304 28 10.0 8.4	III B 49.570	12 6 46.35	[16 37 20.45]	16 3409
79	8.9	45.2	47.4	49.5	51.7	53.9	c	7 49.54	304 28 " "	V B 43.725	12 7 13.93	16 39 12.84	16 3413
80	8.6	23.9	26.2	28.3	32.4	34.2	c_3 d_2	8 23.94	304 28 " "	V 47.610	12 7 48.33	−16 34 44.61	−16 3415
81	......	11.0	13.2	15.4	17.6	19.7	c	11 15.38	304 6 10.0 7.4	III B 50.100	12 10 39.79	−16 59 11.77	−16 3424
82	8.0	25.1	27.2	29.4	31.5	33.8	c	12 29.40	304 56 10.0 8.0	III 42.660	12 11 53.81	16 8 17.91	15 3442
83	9.1	59.8	2.0	4.1	6.2	8.5	c	13 4.12	304 56 " "	III 45.585	12 12 28.52	16 7 22.75	15 3444
84	9.0	37.5	39.8	41.9	44.1	46.3	c	13 41.92	302 54 10.0 7.5	V 45.980	12 13 6.34	18 9 21.06	17 3596
85	8.6	40.1	42.3	44.5	46.7	48.9	c	14 44.50	305 20 10.0 7.9	III 46.210	12 14 8.90	15 43 8.56	15 3450
86	9.0	56.4	58.5	0.4	2.2	4.5	a	16 30.30	304 44 10.0 7.6	I 45.210	12 15 54.72	16 19 29.04	16 3443
87	9.2	12.4	14.7	16.8	19.1	21.2	c	17 16.84	304 28 10.4 8.3	III 44.790	12 16 41.27	16 35 37.88	16 3445
88	9.2	28.8	30.9	33.1	35.2	37.2	c	18 33.04	305 54 10.0 8.1	III C 44.890	12 17 57.46	15 15 58.75	15 3458
89	9.0	42.1	44.4	46.5	48.7	50.9	c	18 46.52	305 54 " "	V 44.200	12 18 10.95	15 9 45.59	14 3506
90	9.2	......	37.3	39.2	41.2	43.0	e	19 9.22	303 56 10.0 7.8	VII 47.870	12 18 33.67	−17 6 41.27	−16 3454
91	9.3	34.5	36.7	39.0	41.2	43.4	c	20 38.96	303 56 " "	III (B) 44.370	12 20 3.42	−17 11 1.64	−16 3456
92	8.8	15.2	17.4	19.6	21.7	23.9	c	21 19.56	304 28 10.0 8.0	V C 46.500	12 20 44.01	16 41 31.79	16 3459
93	9.3	47.3	49.5	51.6	53.5	55.3	e	21 21.60	304 28 " "	VII A 40.780	12 20 46.05	16 33 40.34	16 3460
94	9.3	20.2	22.5	24.6	28.7	30.4	c_3 d_2	22 20.22	304 28 " "	V A 39.240	12 21 44.68	16 34 9.92	16 3465
95	7.0	13.4	15.6	17.6	22.1	23.6	c_3 d_2	23 13.42	305 0 10.0 7.5	V 41.300	12 22 37.87	16 4 43.91	15 3471
96	8.7	24.3	26.5	28.7	30.9	33.0	c	24 28.68	305 12 10.0 8.0	III 48.650	12 23 53.13	15 50 21.57	15 3476
97	9.0	5.8	7.5	11.6	13.7	15.9	b_2 c_3	25 15.94	305 12 " "	III C 45.445	12 24 40.40	15 57 49.79	15 3481
98	......	17.0	19.1	21.1	25.5	27.1	c_3 d_2	25 16.92	305 12 " "	V C 46.420	12 24 41.38	15 57 30.90	15 3482
99	9.0	50.7	52.6	54.6	56.3	58.6	a	26 24.40	305 12 " "	III B 42.280	12 25 48.86	15 55 37.49	15 3485
100	6.5	56.9	58.9	0.7	2.6	4.9	a	27 30.59	305 26 10.0 7.7	III 41.820	12 26 55.05	−15 38 31.92	−15 3489
101	8.8	50.1	52.2	54.3	56.7	58.8	c	27 54.42	(302 52) 10.0 7.0	V 45.480	12 27 18.92	−18 11 30.29	−17 3644
102	9.3	24.8	26.3	30.6	32.8	35.0	b_2 c_3	31 34.95	304 18 10.0 8.3	III A 41.160	12 30 59.45	16 43 32.68	16 3500
103	9.3	9.4	11.5	13.4	15.4	17.3	e	31 43.51	304 18 " "	VII B 38.290	12 31 8.01	16 50 56.57	16 3501
104	9.2	57.8	0.1	2.1	6.4	8.1	c_3 d_2	32 57.84	304 18 " "	V A 43.475	12 32 22.35	16 42 48.28	16 3503
105	9.4	51.3	53.5	55.7	0.0	1.5	c_3 d_2	33 51.33	303 58 10.0 7.5	V B 45.350	12 33 15.85	17 8 42.31	16 3506
106	9.3	40.6	42.9	44.8	46.9	48.6	e	34 14.84	303 58 " "	VII 46.260	12 33 39.36	17 5 11.29	16 3509
107	8.9	17.3	19.5	21.6	23.9	26.1	c	35 21.68	303 58 " "	V B .47.260	12 34 46.21	17 8 5.54	16 3513
108	9.0	57.8	0.0	1.9	3.9	5.6	e	35 31.91	303 58 " "	VII C 51.430	12 34 56.44	17 9 57.66	16 3514
109	8.9	43.9	46.2	48.3	50.5	52.6	c	36 48.30	306 8 10.0 8.5	V 48.410	12 36 12.80	14 54 22.75	14 3555
110	8.8	6.8	8.8	11.0	13.2	15.3	c	38 11.02	306 8 " "	III 46.550	12 37 35.52	−14 54 57.96	−14 3561
111	9.2	36.3	38.4	40.7	42.9	45.0	c	38 40.66	305 8 10.0 7.5	III B 47.610	12 38 5.18	−15 57 54.75	−15 3518
112	9.4	48.7	50.7	52.8	55.0	57.2	c	39 52.88	305 8 " "	III 42.610	12 39 17.40	15 56 16.78	15 3523
113	8.7	19.2	21.4	23.5	25.7	27.8	c	40 23.52	305 34 10.5 8.8	V 44.075	12 39 48.03	15 29 46.85	15 3525
114	8.9	38.0	39.4	43.8	46.0	48.2	b_2 c_3	41 48.14	305 4 10.0 7.8	III 44.950	12 41 12.67	15 59 31.78	15 3530
115	8.9	52.9	55.1	57.2	59.3	1.7	c	41 57.24	305 4 " "	V 46.360	12 41 21.77	15 59 5.06	15 3531
116	9.0	22.0	24.1	26.2	28.5	30.6	c	43 26.28	304 26 10.0 7.9	III 47.070	12 42 50.84	16 36 52.79	16 3535
117	9.0	12.2	14.2	16.1	18.0	20.2	a	44 46.08	304 26 " "	I 41.270	12 44 10.64	16 38 43.44	16 3540
118	8.8	42.5	44.7	46.9	49.2	51.3	c	44 46.92	304 26 " "	III A 39.685	12 44 11.48	16 35 59.70	16 3541
119	9.3	43.3	45.5	47.6	49.9	51.9	c	45 47.64	303 0 10.0 7.5	III A 38.230	12 45 12.24	18 2 32.27	17 3715
120	9.0	14.1	16.4	18.4	20.7	22.8	c	46 18.48	303 0 " "	V B 45.720	12 45 43.08	−18 6 37.24	−17 3717
121	9.2	38.6	40.8	42.9	45.0	47.3	c	47 42.92	303 24 10.0 8.1	III 45.940	12 47 7.52	−17 39 17.22	−17 3722
122	8.6	27.2	29.4	31.5	33.7	35.8	c	48 31.52	305 0 10.0 8.3	III 46.780	12 47 56.09	16 2 55.93	15 3551
123	9.4	18.0	19.9	21.8	23.7	26.2	a	51 51.85	304 32 10.0 7.5	III C 49.180	12 51 16.45	16 36 38.09	16 3568
124	9.4	58.2	0.4	2.6	4.7	7.0	c	52 2.58	304 32 " "	V 51.225	12 51 27.18	16 29 32.45	16 3569
125	9.5	33.8	36.1	38.1	40.1	41.9	e	52 8.17	304 32 " "	VII 48.750	12 51 32.77	16 30 20.11	16 3570
126	8.8	58.1	0.2	2.3	4.5	6.6	c	57 2.34	305 2 10.0 8.0	V 41.740	12 56 26.95	16 2 32.19	15 3580
127	8.5	10.9	13.1	15.3	17.5	19.6	c	58 15.28	304 44 10.0 7.5	V 41.530	12 57 39.90	16 20 37.22	16 3588
128	......	10.0	11.9	13.8	15.7	18.1	a	0 43.82	304 36 10.0 7.5	I 43.250	13 0 8.46	16 28 3.40	16 3597
129	9.0	54.2	56.5	58.6	0.8	2.9	c	0 58.60	305 46 10.0 8.1	V B 50.380	13 0 23.20	15 18 57.36	15 3596
130	9.3	52.1	54.4	56.6	58.7	0.8	c	1 56.52	305 10 10.0 7.6	V B 50.630	13 1 21.15	−15 54 54.45	−15 3597
131	9.3	19.6	21.7	24.0	26.1	28.3	c	3 23.94	304 54 10.0 7.9	III 47.840	13 2 48.59	−16 8 34.41	−15 3599
132	9.1	20.5	22.7	24.8	27.0	29.1	c	4 24.82	304 54 " "	III B 44.105	13 3 49.48	16 12 59.79	15 3605
133	7.0	55.0	57.1	59.3	1.5	3.6	c	4 59.30	305 6 10.0 8.1	V B 50.520	13 4 23.95	15 58 57.13	15 3608
134	8.7	46.1	48.4	50.5	52.7	54.8	c	5 50.50	305 36 9.6 7.3	V 42.390	13 5 15.14	−15 28 17.50	−15 3609

Reduction Elements. Zone 109.

	OBSERVED.			ADOPTED.			
1895.	*c*	*b*	*a*	*c*	*b*	*a*	
	s	s	s	s	s	s	
April 18.3....	+0.032	−0.040	−0.196	+0.032	−0.040	−0.196	For first group.
18.5....	+0.169	+0.086	−0.359	+0.169	+0.086	−0.359	For second group.

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi IX. 13		Lalande 18817		κ Hydrae		υ² Hydrae		ζ Crateris		Lalande 22585	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	301 44 9.25		300 24 9.00		307 10 9.70		308 28 9.30		303 16 8.85		311 12 8.65	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	42.100	4 41.15	42.490	4 48.42	46.715	6 9.46	46.540	6 6.46	44.830	5 33.08	41.130	4 22.27
II Red. to Mer.	.140	0.19	.510	0.21	.745	0.14	.560	0.12	.825	0.18	.160	0.10
VI Inclination	.170		.555		.775		.610		.880		.180	
VII Refraction	.175	1 32.8	.545	1 37.9	.770	1 15.8	.670	1 12.6	.880	1 28.2	.175	1 6.3

	β Corvi		ψ Virginis		53 Virginis	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	298 14 8.95		312 4 9.70		305 24 8.80	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	42.765	4 54.54		5 2.87		5 32.04
II Red. to Mer.	.830	0.23	43.235	0.07	44.775	0.14
VI Inclination	.880		.310	−0.18	.810	−0.18
VII Refraction	.900	1 47.8	.290	1 4.4	.815	1 21.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi IX. 13	9 8 0.25	11	−0.17	−48.77	301 47 17.8	36.0
1 H. Draconis	9 23 3.42	11	+0.95	[−48.80]	42 52	....
Lalande 18817	9 29 12.60	11	−0.17	−48.76	300 27 19.7	36.1
κ Hydrae	9 36 6.69	11	−0.15	−48.84	307 15 3.5	36.2
υ² Hydrae	10 0 51.22	11	−0.15	−48.89	308 33 3.3	34.9
ζ Crateris	11 40 17.37	11	−0.09	−48.98	303 20 13.9	31.0
Lalande 22585	11 56 12.11	11	−0.04	−48.95	311 15 24.7	31.7
β Corvi	12 29 43.33	11	−0.12	−48.92	298 17 15.9	31.2
ψ Virginis	12 49 44.70	11	−0.04	−48.98	312 8 8.1	31.8
43 H. Cephei S. P.	12 54 58.64	5	−6.84	[−48.94]	55 22	....
53 Virginis	13 7 19.37	11	−0.08	−48.89	305 28 19.2	32.3

h			s
9.558	*dt*		−48.815
	Hourly rate		− 0.0452

	h m	° ′ ″
Adopted Equator Point before	10 0..321	6 35.80
Adopted Equator Point after	10 0..321	6 31.60

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
9 12	29.806	53.8	52.2
10 36	29.828	52.0	49.3
11 3	29.817	51.1	48.6
12 9	29.806	48.6	47.2
13 10	29.796	47.2	46.7

Notes.
Lalande 18817. Images unsteady.
26. Disappeared.
ζ Crateris. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		
	To 10ʰ	From 10ʰ
°	s	s
303	−0.162	−0.090
304	0.160	0.084
305	0.158	0.079
306	0.155	0.074
307	−0.153	−0.068

APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
	302°	303°	304°	305°	306°	307°
h m	s	s	s	s	s	s
9 30	......	......	+12.812	+12.878	+12.943	......
10 0	......	......	12.878	12.930	12.982	......
10 30	......	......	12.967	13.005	13.043	......
11 0	+13.031	+13.054	13.079	13.103	13.128	......
11 30	+13.194	13.202	13.212	13.222	13.231	+13.239
12 0	......	13.372	13.365	13.359	13.353	13.347
12 30	......	13.555	13.533	13.513	13.492	13.471
13 0	......	+13.752	13.716	13.681	13.645	+13.610
13 30	......	......	+13.907	+13.858	+13.808	......

APPARENT RIGHT ASCENSION.	D= Z. D. N. to 1895.0						R				
	302°	303°	304°	305°	306°	307°	302° 30′	303° 30′	304° 30′	305° 30′	306° 30′
h m	″	″	″	″	″	″	″	″	″	″	″
9 30	.....	.....	+11.78	+11.52	+11.26	.....	90.47	87.10	83.91	80.85	77.96
10 0	.....	.....	12.97	12.73	12.49	.....	90.70	87.32	84.12	81.06	78.16
10 30	.....	.....	14.07	13.85	13.63	.....	90.91	87.52	84.31	81.25	78.34
11 0	+15.41	+15.22	15.04	14.84	14.64	.....	91.03	87.64	84.43	81.36	78.45
11 30	+16.18	16.01	15.86	15.70	15.52	+15.36	91.12	87.72	84.51	81.43	78.52
12 0	.....	16.66	16.53	16.40	16.27	16.14	91.22	87.82	84.61	81.53	78.61
12 30	.....	17.13	17.03	16.94	16.85	16.75	91.28	87.88	84.66	81.58	78.67
13 0	.....	+17.41	17.35	17.30	17.24	+17.19	91.33	87.92	84.70	81.62	78.70
13 30	.....	.....	+17.52	+17.51	+17.50	.....	91.37	87.96	84.74	81.66	78.74

1895 APRIL 20. ZONE 110. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.2	7.0	9.1	11.3	13.5	15.7	c	36 11.32	304 2 10.0 10.0	III 42.105	10 35 34.38	−17 2 28.72	−16 3106
2	8.1	45.4	47.4	49.2	51.1	53.3	a	43 18.95	306 24 10.0 10.3	I B 40.740	10 42 42.12	14 44 2.61	14 3186
3	8.8	16.5	18.9	20.9	23.1	25.2	c	43 20.92	306 24 " "	III (B) 44.025	10 42 44.08	14 43 0.00	14 3188^1
4	8.7	46.7	48.8	50.7	52.7	54.5	e	43 21.11	306 24 " "	VII (B) 44.450	10 42 44.28	14 42 52.18	14 3188^2
5	8.7	13.9	16.0	17.9	19.8	22.1	a	44 47.59	306 24 " "	III 49.300	10 44 10.76	14 38 5.16	14 3193
6	9.0	41.2	43.3	45.0	47.1	49.4	a	48 15.39	302 58 10.0 9.0	I 42.640	10 47 38.45	18 6 23.00	17 3252
7	8.5	35.3	37.5	39.7	41.9	44.0	c	48 39.68	304 18 10.3 10.7	III 47.135	10 48 2.78	16 44 52.40	16 3142
8	8.4	0.8	2.7	4.9	7.1	9.2	c	2 4.94	305 4 10.0 9.4	III 45.440	11 1 28.11	15 59 24.91	15 3196
9	9.6	7.7	9.8	12.0	14.3	16.3	c	8 12.02	304 38 10.0 9.7	III 45.800	11 7 35.20	16 25 19.55	16 3203
10	9.1	52.7	54.8	57.0	59.2	1.2	c	8 56.98	306 38 10.0 9.6	III 43.195	11 8 20.21	−14 26 4.32	−14 3284
11	8.4	36.7	38.8	40.9	43.1	45.3	c	9 40.96	306 10 10.5 10.2	III 45.240	11 9 4.18	−14 53 25.79	−14 3289
12	8.9	45.4	47.7	49.7	52.0	54.1	c	14 49.78	305 22 10.0 9.3	III 43.880	11 14 13.00	15 41 55.04	15 3241
13	8.8	17.1	19.3	21.4	23.7	25.7	c	15 21.44	305 22 " "	V 46.420	11 14 44.66	15 41 6.68	15 3242
14	9.2	14.7	17.0	19.1	21.3	23.4	c	18 19.10	304 18 10.0 9.7	III 44.070	11 17 42.31	16 45 54.39	16 3237
15	8.4	3.7	5.9	8.0	10.3	12.4	c	19 8.06	304 0 9.5 8.4	III 42.835	11 18 31.27	17 4 19.91	16 3238
16	......	25.7	27.7	29.9	32.2	34.2	c	20 29.94	304 0 " "	III B 41.130	11 19 53.16	17 8 6.49	16 3244
17	9.4	58.6	0.7	2.8	5.0	7.3	c	22 2.88	303 18 9.5 8.6	III C 45.590	11 21 26.09	17 51 55.96	17 3380
18	8.8	45.0	47.2	49.4	51.6	53.8	c	22 49.40	303 18 " "	III A 42.990	11 22 12.62	17 43 4.40	17 3385
19	8.8	54.0	56.1	58.3	0.6	2.8	c	23 58.36	303 18 " "	III B 42.570	11 23 21.58	17 49 41.04	17 3391
20	9.4	38.8	40.9	42.9	44.6	46.9	a	25 12.95	303 18 " "	I A 39.670	11 24 36.18	−17 44 7.93	−17 3394
21	8.9	13.9	16.2	18.3	20.6	22.8	c	25 18.36	303 18 " "	III C 46.260	11 24 41.59	−17 51 43.25	−17 3396
22	9.0	24.8	27.0	29.3	31.4	33.5	c	27 29.20	303 22 10.0 9.0	III 46.290	11 26 52.44	17 41 15.34	17 3404
23	9.3	52.3	54.4	56.5	58.7	0.9	c	29 56.56	304 30 10.0 9.1	III 45.710	11 29 19.82	16 33 23.21	16 3280
24	9.4	15.5	17.8	19.9	22.1	24.3	c	30 19.92	304 30 " "	V 40.580	11 29 43.19	16 35 2.04	16 3281
25	8.5	14.7	16.9	19.0	21.3	23.4	c	31 19.06	303 42 10.0 8.8	III 42.515	11 30 42.32	17 22 27.06	17 3418
26	8.3	5.3	7.5	9.3	11.2	13.5	a	33 39.47	303 26 10.0 9.5	I 42.880	11 33 2.74	17 38 19.99	17 3424
27	9.4	14.1	16.4	18.5	20.7	22.9	c	34 18.52	304 8 10.0 9.2	III A 39.160	11 33 41.80	16 54 15.37	16 3297
28	9.1	5.3	7.3	9.4	11.7	13.9	c	35 9.52	304 8 " "	III B 38.355	11 34 32.80	17 0 59.34	16 3299
29	8.0	8.7	10.8	12.6	14.4	16.8	a	36 42.69	303 54 10.0 9.1	I 47.060	11 36 5.98	17 8 58.70	16 3304
30	9.6	52.8	54.3	58.5	0.7	2.8	b_2 c_3	37 2.89	303 54 " "	III C 45.730	11 36 26.17	−17 15 51.55	−17 3442
31	9.4	58.6	0.8	2.6	4.4	6.8	a	38 32.73	303 32 10.0 8.5	I 44.145	11 37 56.02	−17 31 56.09	−17 3450
32	8.7	34.5	36.5	38.4	40.2	42.6	a	39 8.53	303 32 " "	I 42.270	11 38 31.82	17 32 32.06	17 3453
33	9.3	13.9	16.1	18.3	20.4	22.6	c	39 18.26	304 6 10.0 9.0	III 42.090	11 38 41.55	16 58 34.17	16 3313
34	9.5	37.9	40.2	42.3	44.6	46.7	c	39 42.34	304 6 " "	V 46.115	11 39 5.64	16 57 17.28	16 3316
35	9.3	35.2	37.5	39.6	41.9	44.0	c	40 39.64	302 44 10.0 8.6	V 43.620	11 40 2.94	18 20 9.53	18 3229
36	9.4	21.1	23.3	25.4	27.6	29.8	c	42 25.44	302 44 " "	III B 49.855	11 41 48.74	18 21 23.35	18 3239
37	8.9	53.6	55.8	58.0	0.3	2.4	c	42 58.02	302 44 " "	III B 45.940	11 42 21.33	18 22 38.51	18 3240
38	9.6	8.3	10.3	12.2	14.1	16.3	a	44 42.21	304 14 10.0 9.0	I 45.270	11 44 5.53	16 49 32.27	16 3332
39	8.9	29.6	31.6	33.6	35.3	37.6	a	45 3.68	303 14 10.0 8.3	III 44.920	11 44 27.00	17 49 42.90	17 3482
40	8.6	24.1	26.3	28.5	30.7	33.0	c	45 28.52	303 28 10.0 9.3	V 42.210	11 44 51.84	−17 36 34.05	−17 3484
41	8.9	13.1	15.3	17.4	21.7	23.5	c_3 d_2	46 13.10	302 54 10.0 9.1	V 41.320	11 45 36.42	−18 10 53.00	−17 3485
42	8.6	8.4	10.6	12.7	15.0	17.2	c	47 12.78	303 28 10.0 9.0	III 40.870	11 46 36.11	17 36 59.59	17 3488
43	8.8	23.4	25.6	27.8	30.0	32.2	c	48 27.80	303 36 10.0 9.2	III B 46.010	11 47 51.14	17 30 34.25	17 3492
44	9.1	30.1	32.4	34.5	36.8	38.9	c	49 34.54	303 36 " "	III A 47.025	11 48 57.88	17 23 46.28	17 3496
45	9.3	41.3	43.4	45.6	47.8	50.0	c	50 45.62	303 36 " "	III C 47.940	11 50 8.97	17 33 10.17	17 3505
46	.....	52.4	54.5	56.7	58.8	1.2	c	51 56.72	303 36 " "	III C 48.300	11 51 20.08	17 33 3.28	17 3510
47	8.8	47.2	49.2	51.1	52.9	55.3	a	53 21.23	303 36 " "	I C 49.480	11 52 44.59	17 32 40.62	17 3517
48	8.7	11.9	13.9	16.1	18.4	20.6	c	54 16.18	303 52 10.0 9.3	III 43.350	11 53 39.55	17 12 10.66	16 3367
49	9.4	5.8	8.0	10.3	12.5	14.6	c	55 10.24	302 44 10.0 8.5	III 44.175	11 54 33.62	18 19 58.72	18 3290
50	8.9	27.4	29.7	31.8	34.2	36.3	c	56 31.88	303 6 10.0 9.0	III 45.290	11 55 55.26	−17 57 35.92	−17 3529
51	8.7	6.8	9.0	11.1	13.4	15.6	c	57 11.18	302 50 10.0 8.4	III 43.710	11 56 34.57	−18 14 7.36	−17 3536
52	8.9	9.8	11.8	14.0	16.2	18.4	c	0 14.04	303 46 10.5 9.7	III 45.140	11 59 37.44	17 17 36.16	17 3546
53	9.0	11.1	13.2	15.4	17.5	19.7	c	[illegible] 15.38	303 42 10.0 8.3	III B 43.750	12 1 38.79	17 25 17.75	17 3553
54	9.0	38.4	40.7	42.8	45.0	47.2	c	2 42.82	303 42 " "	III 45.640	12 2 6.23	17 21 27.65	17 3555
55	......	44.7	46.8	49.0	51.2	53.5	c	3 49.04	303 8 10.0 8.7	III C 47.185	12 3 12.46	18 1 26.29	17 3559
56	8.1	7.4	9.5	11.8	13.9	16.1	c	4 11.74	303 8 " "	V A 44.110	12 3 35.16	17 52 43.96	17 3562
57	8.0	0.2	2.1	4.2	6.0	8.4	a	5 34.17	304 6 10.0 8.5	I 41.410	12 4 57.59	16 58 46.94	16 3403
58	9.1	4.1	6.3	8.4	10.7	12.8	c	6 8.46	304 46 10.0 8.1	III C 45.550	12 5 31.88	16 23 53.04	16 3407
59	8.6	47.2	49.2	51.5	53.8	55.9	c	6 51.52	304 46 " "	III A 46.190	12 6 14.94	16 13 59.30	15 3429
60	8.8	14.2	16.4	18.6	20.8	23.0	c	7 18.60	302 50 10.0 8.0	V 44.500	12 6 42.05	−18 13 52.66	−17 3569
61	9.1	57.6	59.5	1.4	3.2	5.6	a	9 31.49	303 52 10.0 8.2	I 43.485	12 8 54.94	−17 12 7.88	−16 3418
62	9.3	7.8	10.0	12.2	14.5	16.6	c	11 12.22	302 44 10.0 7.9	III 46.360	12 10 35.69	18 19 16.90	18 3355
63	9.4	24.9	27.0	29.1	31.5	33.6	c	13 29.22	302 44 " "	III 42.960	12 12 52.70	18 20 22.09	18 3362
64	9.6	20.0	22.0	23.8	25.6	28.1	a	14 54.13	302 44 " "	I B 47.390	12 14 17.62	18 22 10.39	18 3365
65	8.8	14.1	16.3	18.5	20.7	22.9	c	17 18.50	303 14 10.0 8.5	III 41.680	12 16 42.00	17 50 44.66	17 3602
66	9.1	4.2	6.5	8.7	10.8	13.0	c	18 8.64	303 30 10.0 8.5	III 42.040	12 17 32.14	17 34 36.88	17 3608
67	9.2	57.9	0.0	2.3	4.5	6.6	c	19 2.26	303 46 10.3 9.8	III 43.750	12 18 25.76	17 18 2.43	17 3612
68	9.0	41.4	43.5	45.5	47.3	49.5	a	20 15.61	303 2 10.0 9.1	III 44.430	12 19 39.13	18 1 52.11	17 3616
69	9.0	31.5	33.5	35.5	37.3	39.6	a	21 5.55	303 40 10.0 9.5	III 46.350	12 20 29.07	17 23 13.05	17 3620
70	8.7	19.7	22.0	24.1	26.4	28.5	c	21 24.14	303 40 " "	III 48.520	12 20 47.66	−17 22 31.39	−17 3621

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
71	8.2	5.0	7.0	9.0	10.9	13.1	a	22 39.14	303 12 10.0	8.4	I	45.470	12 22 2.67	−17 51 31.28	−17 3626
72	9.3	54.5	56.7	58.8	1.1	3.3	c	22 58.88	303 0 10.0	9.2	III	45.890	12 22 22.42	18 3 24.02	17 3627
73	8.0	16.8	19.1	21.3	23.6	25.7	c	23 21.30	303 0 "	"	V	45.930	12 22 44.84	18 3 23.60	17 3629
74	9.3	11.4	13.6	15.6	18.2	20.3	c	24 15.82	304 0 10.0	8.6	V	49.730	12 23 39.35	17 2 7.84	16 3472
75	9.5	40.2	42.6	44.8	47.0	49.2	c	25 44.76	302 52 10.0	8.2	III	46.430	12 25 8.32	18 11 14.43	17 3638
76	9.0	31.5	33.8	35.9	38.1	40.3	c	26 35.92	303 54 10.0	9.3	III	44.520	12 25 59.45	17 9 47.29	16 3480
77	9.0	15.5	17.7	19.7	21.7	23.8	a	27 49.90	302 40 10.0	8.4	I	44.180	12 27 13.46	18 23 57.50	18 3414
78	8.5	1.5	3.6	5.9	8.1	10.2	c	28 5.86	304 24 10.0	8.8	III	43.285	12 27 29.39	16 40 9.66	16 3488
79	8.1	27.9	30.1	32.3	34.6	36.7	c	29 32.32	303 26 10.0	8.8	III	42.310	12 28 55.88	17 38 31.21	17 3651
80	9.4	13.5	15.6	17.7	19.9	22.2	c	30 17.78	303 26 "	"	III	48.120	12 29 41.34	−17 36 39.66	−17 3655
81	9.0	4.6	6.6	8.6	10.5	12.7	a	31 38.83	302 44 10.0	8.4	I	43.010	12 31 2.42	−18 20 19.54	−18 3427
82	9.7	44.8	47.1	49.2	51.5	53.6	c	31 49.24	303 6 10.0	8.3	V	42.260	12 31 12.82	17 58 33.71	17 3660
83	9.3	32.5	34.8	36.9	39.0	41.2	c	33 36.88	302 56 10.0	8.6	III	44.200	12 33 0.47	18 7 56.40	17 3665
84	9.5	18.4	20.5	22.7	25.0	27.1	c	34 22.74	302 56 "	"	III A	47.665	12 33 46.34	18 3 35.14	17 3670
85	9.4	32.1	34.3	36.6	38.7	40.8	c	35 36.50	302 56 "	"	III C	42.090	12 35 0.11	18 15 3.56	18 3437
86	9.5	27.9	29.9	32.3	34.4	36.4	c	36 32.18	302 56 "	"	III	48.020	12 35 55.79	18 6 42.90	17 3683
87	9.4	32.5	34.9	36.9	39.2	41.3	c	37 36.96	302 46 10.0	8.3	III	46.240	12 37 0.58	18 17 17.69	18 3445
88	9.2	1.4	3.8	6.0	8.3	10.3	c	38 5.96	302 46 "	"	III B	50.140	12 37 29.59	18 19 16.61	18 3448
89	8.9	48.5	50.7	52.8	54.9	57.1	c	38 52.80	302 46 "	"	III B	49.950	12 38 16.43	18 19 20.19	18 3452
90	9.4	15.2	17.4	19.6	21.8	23.9	c	39 19.58	302 46 "	"	V C	49.625	12 38 43.21	−18 22 39.21	−18 3453
91	8.0	59.9	1.9	4.2	6.4	8.6	c	40 4.20	303 50 10.0	8.8	III	44.500	12 39 27.81	−17 13 47.28	−16 3527
92	8.5	40.2	42.4	44.5	46.7	48.8	c	41 44.52	303 24 10.0	9.0	III	42.750	12 41 8.15	17 40 21.98	17 3704
93	9.1	49.7	51.8	54.0	56.2	58.5	c	42 54.04	302 40 10.0	9.0	III	42.790	12 42 17.70	18 24 23.49	18 3466
94	9.0	20.4	22.6	24.8	27.0	29.2	c	43 24.80	303 32 10.0	9.0	III	42.230	12 42 48.44	17 32 31.41	17 3713
95	9.3	46.1	48.2	50.5	52.7	54.9	c	45 50.48	302 44 10.0	8.7	III	42.200	12 45 14.16	18 20 34.51	18 3477
96	9.0	39.7	41.8	43.6	45.5	47.9	a	47 13.92	302 44 "	"	I B	41.570	12 46 37.61	18 23 59.83	18 3483
97	8.6	58.0	0.1	1.9	3.9	6.2	a	48 32.18	303 6 10.0	8.0	I	45.900	12 47 55.86	17 57 21.87	17 3723
98	9.0	44.3	46.5	48.2	49.9	52.4	a	49 18.34	303 34 10.0	8.2	I	45.300	12 48 42.01	17 29 31.74	17 3725
99	8.4	15.5	17.9	20.0	22.3	24.4	c	49 20.01	303 34 "	"	III	44.785	12 48 43.68	17 29 42.19	17 3726
100	9.4	28.0	30.3	32.4	34.5	36.6	c	50 32.36	303 4 10.0	8.9	III	43.150	12 49 56.06	−18 0 14.71	−17 3733
101	9.3	27.2	29.4	31.5	33.8	36.0	c	51 31.58	302 52 10.0	8.6	III	41.795	12 50 55.29	−18 12 41.41	−17 3736
102	9.0	7.7	10.0	12.1	14.4	16.7	c	52 12.18	303 0 10.0	8.8	III	47.390	12 51 35.89	18 2 53.43	17 3739
103	9.3	23.2	25.4	27.6	29.9	32.0	c	53 27.62	303 26 10.0	9.5	III	48.160	12 52 51.32	17 36 36.79	17 3742
104	8.9	14.8	17.0	19.1	21.4	23.5	c	54 19.16	303 52 10.0	8.8	III	48.060	12 53 42.85	17 10 37.64	16 3576
105	9.0	27.9	30.0	32.4	34.6	36.7	c	55 32.32	303 2 10.0	8.4	III	46.890	12 54 56.05	18 1 2.79	17 3749
106	8.2	24.9	27.1	29.3	31.4	33.6	c	56 29.26	303 28 10.0	8.8	III	46.850	12 55 52.98	17 35 1.89	17 3751
107	8.7	5.2	7.3	9.5	11.6	13.9	c	58 9.50	303 10 10.0	8.9	III	43.750	12 57 33.24	17 54 2.13	17 3757
108	9.1	58.3	......	2.8	5.0	7.1	c	59 2.76	303 48 10.0	8.5	III A	39.885	12 58 26.48	17 13 59.71	16 3590
109	9.5	0.4	2.7	4.8	6.9	9.3	c	0 4.82	303 48 "	"	III C	43.910	12 59 28.55	17 22 23.83	17 3766
110	8.9	59.2	1.5	3.8	6.0	8.2	c	1 3.74	302 44 10.0	8.8	III A	41.940	13 0 27.51	−18 17 23.31	−18 3539
111	8.9	38.6	40.7	43.0	45.0	47.2	c	1 42.90	302 44 "	"	III B	38.995	13 1 6.68	−18 24 48.29	−18 3540
112	8.8	2.3	4.4	6.4	8.7	10.8	c	3 6.52	303 40 10.0	8.8	III B	40.720	13 2 30.28	17 28 12.03	17 3774
113	9.6	41.6	43.8	46.1	48.3	50.3	c	3 46.02	303 40 "	"	V A	38.380	13 3 9.78	17 22 28.48	17 3775
114	8.7	39.4	41.5	43.9	46.1	48.3	c	4 43.84	304 22 10.0	9.5	III	44.000	13 4 7.58	16 41 52.57	16 3607
115	9.8	54.0	56.2	58.4	2.7	4.3	$c_3\,d_2$	5 54.04	303 46 10.0	9.5	V B	41.590	13 5 17.81	17 21 54.59	17 3784
116	......	58.6	0.9	5.2	7.0	9.3	$c_4\,d_3$	6 56.53	303 44 10.0	8.6	VI A	39.260	13 6 20.30	−17 18 11.19	−17 3786

Reduction Elements. Zone 110.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 20.3....	+0.182	−0.018	−0.048	+0.188	+0.042	−0.114
20.5....	+0.194	+0.103	−0.181			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	μ Hydrae		44 Hydrae		φ Hydrae		ν Hydrae		γ Hydrae		73 Virginis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	304 44 9.90		297 50 9.60		304 42 9.95		305 24 9.80		298 26 8.80		302 52 8.40	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.....	44.840	5 33.48	45.365	5 43.15	45.225	5 40.96		4 53.21	42.740	4 53.69		4 24.92
II Red. to Mer......	.840	0.16	.370	0.23	.250	0.16		0.16	.830	0.22		0.18
VI Inclination	.930		.380		.305		42.760	−0.45	.755		41.330	−0.45
VII Refraction.......	.890	1 20.5	.400	1 45.5	.280	1 20.7	.790	1 18.7	.875	1 45.3	.270	1 29.2

	m Virginis		89 Virginis	
	° ′ ″		° ′ ″	
CIRCLE READING.	312 52 8.60		303 26 9.25	
	r	′ ″	r	′ ″
I Microm. Eq.....	42.525	4 48.71	42.990	4 57.54
II Red. to Mer......	.490	0.08	43.025	0.17
VI Inclination	.575		.010	
VII Refraction...	.570	1 2.4	42.980	1 27.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
μ Hydrae	10 21 52. 21	11	+ 0. 12	—50. 08	304 48 23. 0	37. 9
9 H. Draconis	10 27 6. 07	11	+ 1. 22	[—50. 31]	37 20	....
44 Hydrae	10 29 52. 69	11	+ 0. 12	—50. 09	297 54 7. 5	37. 8
φ Hydrae	10 34 19. 48	11	+ 0. 12	—50. 06	304 46 30. 4	37. 9
ν Hydrae	10 45 18. 26	11	+ 0. 12	—50. 10	305 27 44. 0	37. 4
γ Hydrae	13 14 4. 99	11	+ 0. 12	—50. 16	298 29 17. 4	38. 4
α Ursae Minoris S. P.	13 20 20. 54	5	—13. 92	[—52. 50]	52 18	....
72 Virginis	13 25 49. 16	10	+ 0. 14	—50. 04	315 10	....
73 Virginis	13 27 15. 26	11	+ 0. 12	—50. 11	302 55 3. 8	36. 4
m Virginis	13 36 58. 31	11	+ 0. 14	—50. 18	312 55 55. 0	35. 5
89 Virginis	13 45 2. 18	11	+ 0. 12	—50. 10	303 29 39. 4	36. 7

h 10. 548 .... *dt* .... s —50. 082

Hourly rate .... — 0. 0122

Adopted Equator Point .... 321° 6′ 37″. 25

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
10 24	29. 838	66. 9	66. 4
11 15	29. 834	64. 0	64. 2
12 9	29. 828	62. 3	62. 2
13 10	29. 844	60. 0	57. 0
13 16	29. 848	58. 0	54. 4
13 25	......	....	51. 2
13 36	......	....	49. 2
13 45	29. 838	53. 5	48. 8

Notes.

72. Suspected double.

Zone stopped because of bad seeing.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
			302°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	s
303	+0. 121	10 30	......	+12. 959	+12. 998	+13. 035	+13. 073	+13. 110
304	0. 123	11 0	......	13. 081	13. 105	13. 130	13. 153	13. 176
305	0. 124	11 30	+13. 216	13. 224	13. 233	13. 243	+13. 251	+13. 260
306	0. 125	12 0	13. 393	13. 387	13. 381	13. 375	......	......
307	+0. 126	12 30	13. 586	13. 565	13. 545	13. 523	......	......
		13 0	13. 791	13. 756	13. 719	13. 686	......	......
		13 30	+14. 004	+13. 956	+13. 905	+13. 856	......	......

APPARENT RIGHT ASCENSION.	*D* = Z. D. N. to 1895.0						*R*					
	302°	303°	304°	305°	306°	307°	302° 30′	303°	304°	305°	306°	307°
h m	″	″	″	″	″	″	″	″	″	″	″	″
10 30	.....	+14. 31	+14. 09	+13. 86	+13. 63	+13. 40	87. 94	86. 28	83. 10	80. 06	77. 18	74. 42
11 0	.....	15. 28	15. 08	14. 88	14. 67	14. 46	88. 17	86. 50	83. 31	80. 26	77. 38	74. 61
11 30	+16. 27	16. 10	15. 92	15. 75	+15. 58	+15. 39	88. 37	86. 70	83. 50	80. 44	77. 55	74. 78
12 0	16. 89	16. 75	16. 61	16. 48	.....	.....	88. 55	86. 88	83. 68	80. 61	77. 71	74. 94
12 30	17. 33	17. 23	17. 13	17. 02	.....	.....	88. 94	87. 26	84. 04	80. 97	78. 06	75. 27
13 0	17. 60	17. 54	17. 48	17. 41	.....	.....	89. 39	87. 70	84. 47	81. 38	78. 45	75. 65
13 30	+17. 67	+17. 65	+17. 63	+17. 61	.....	.....	90. 76	89. 04	85. 76	82. 62	79. 65	76. 81

1895 MAY 6. ZONE III. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	8. 5	48. 9	50. 5	54. 8	56. 9	59. 1	b₂ c₃	8 59. 12	303 28	10. 0	6. 1	III	40. 960	11 8 14. 97	—17 36 55. 92	—17 3326
2	8. 6	20. 0	22. 2	24. 5	28. 6	30. 3	c₃ d₂	9 20. 09	305 38	10. 0	7. 5	V	46. 915	11 8 35. 98	15 24 55. 36	15 3223¹
3	8. 7	45. 9	48. 0	50. 0	52. 1	54. 0	e	9 20. 33	305 38	"	"	VII	46. 010	11 8 36. 22	15 25 12. 88	15 3223
4	8. 8	27. 4	29. 6	31. 7	33. 9	36. 0	c	15 31. 72	306 18	10. 0	5. 6	III	43. 855	11 14 47. 63	14 45 53. 33	14 3305
5	8. 7	3. 3	5. 4	7. 6	9. 8	12. 0	c	23 7. 62	303 4	10. 0	6. 4	III A	39. 610	11 22 23. 51	17 58 8. 99	17 3386
6	8. 5	54. 3	56. 4	58. 6	0. 9	3. 0	c	23 58. 64	303 4	"	"	III C	47. 025	11 23 14. 53	18 5 28. 19	17 3389
7	8. 7	5. 8	7. 8	10. 1	12. 2	14. 4	c	31 10. 06	306 24	10. 0	6. 5	III A	48. 470	11 30 26. 01	14 35 10. 07	14 3353
8	8. 6	34. 5	36. 7	38. 7	40. 9	43. 0	c	31 38. 76	306 24	"	"	V C	47. 545	11 30 54. 71	14 45 9. 05	14 3357
9	8. 6	13. 7	15. 7	17. 6	19. 5	21. 7	a	33 47. 56	304 36	10. 0	6. 1	I	45. 170	11 33 3. 50	16 27 32. 54	16 3295
10	8. 5	30. 2	32. 3	34. 0	35. 9	38. 3	a	39 4. 00	304 58	10. 0	6. 9	I B	48. 675	11 38 19. 96	—16 7 37. 84	—15 3341
11	8. 8	54. 7	56. 7	58. 6	0. 4	2. 8	a	39 28. 52	304 58	"	"	I C	44. 040	11 38 44. 48	—16 12 20. 17	—15 3343
12	8. 6	34. 6	36. 8	38. 6	40. 3	42. 7	a	40 8. 46	304 58	"	"	I A	41. 610	11 39 24. 42	16 3 25. 10	15 3347
13	......	21. 1	23. 4	25. 7	27. 8	29. 9	c	40 25. 58	303 24	10. 0	7. 5	III (C)	40. 045	11 39 41. 54	17 47 41. 08	17 3460
14	9. 0	24. 6	26. 8	28. 9	30. 9	33. 4	c	41 28. 92	303 24	"	"	V A	41. 370	11 40 44. 88	17 37 34. 33	17 3465
15	9. 1	27. 6	29. 8	32. 0	34. 2	36. 4	c	42 32. 00	304 4	10. 0	6. 6	III	45. 875	11 41 47. 97	—16 59 21. 00	—16 3324

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
16	9.0	9.4	11.4	13.3	15.3	17.5	a	44 43.27	304 46 10.0	6.6	I	41.400	11 43 59.24	—16 18 44.34	—16 3331
17	8.1	12.9	15.0	17.3	19.4	21.6	c	45 17.24	304 0 10.0	6.1	III	45.305	11 44 33.21	17 3 32.38	16 3333
18	8.4	4.7	6.8	9.0	11.2	13.3	c	46 9.00	304 0 "	"	III C	41.820	11 45 24.98	17 11 6.02	16 3337
19	8.1	12.9	15.0	17.2	19.4	21.6	c	47 17.22	304 0 "	"	III A	43.800	11 46 33.20	17 0 46.58	16 3341
20	9.2	1.6	3.7	5.9	8.2	10.3	c	48 5.94	304 0 "	"	III C	47.450	11 47 21.92	—17 9 17.97	—16 3344
21	......	39.6	41.9	44.0	46.2	48.3	c	48 44.00	304 0 "	"	V (A)	42.220	11 47 59.99	—17 1 17.04	—16 3347
22	8.0	3.7	5.8	10.1	11.8	14.4	c_4 d_3	49 1.55	305 2 10.0	6.4	VI	43.175	11 48 17.54	16 2 10.70	15 3375
23	9.0	15.6	17.8	19.8	21.8	23.5	e	51 49.83	304 22 10.0	4.8	VII	40.580	11 51 5.83	16 43 3.21	16 3359
24	8.5	11.6	13.6	15.6	17.5	19.5	e	52 45.52	303 14 10.0	6.1	VII	45.370	11 52 1.52	17 49 33.92	17 3514
25	8.0	56.0	58.3	0.3	2.3	4.1	e	53 30.05	302 38 10.0	6.0	VII	45.810	11 52 46.06	18 25 27.35	18 3285
26	8.9	39.3	41.5	43.7	45.9	48.0	c	55 43.68	303 38 10.0	6.0	V	41.940	11 54 59.69	17 26 38.43	17 3527
27	8.0	59.1	1.3	3.3	5.8	7.7	c	57 3.44	304 6 10.0	6.4	III	45.125	11 56 19.45	16 57 35.37	16 3373
28	8.5	57.3	59.5	1.3	3.0	5.4	a	58 31.32	303 56 10.0	7.0	I	45.860	11 57 47.33	17 7 20.90	16 3379
29	7.4	59.3	1.5	3.5	5.7	7.8	c	3 3.56	303 26 10.0	6.2	III	43.700	12 2 19.60	17 38 4.66	17 3557
30	8.8	45.4	47.5	49.7	51.8	54.0	c	4 49.68	303 36 10.0	6.5	III	42.880	12 4 5.72	—17 28 19.72	17 3564
31	7.7	3.8	6.1	8.1	10.0	11.8	e	5 38.21	305 6 10.0	7.0	V	46.630	12 4 54.24	—15 57 3.57	—15 3425
32	8.9	31.8	33.8	35.8	37.9	39.6	[illegible]	6 6.01	305 6 "	"	VII C	44.480	12 5 22.04	16 4 10.66	15 3427
33	8.8	41.0	43.2	45.3	47.6	49.8	c	7 45.38	303 14 10.0	7.2	III	42.825	12 7 1.44	17 50 21.44	17 3571
34	8.4	5.3	7.5	9.5	14.0	15.5	c_3 d_2	8 5.35	306 10 10.0	9.3	V	43.130	12 7 21.38	14 54 6.69	14 3476
35	8.9	37.4	39.4	41.3	43.6	45.8	c	9 41.50	306 10 "	"	III B	42.635	12 8 57.53	14 57 29.57	14 3479
36	9.1	55.8	57.8	0.1	2.3	4.5	c	11 0.10	303 4 10.0	7.4	III B	40.830	12 10 16.17	18 4 13.84	17 3583
37	8.0	11.0	13.2	15.5	17.7	19.8	c	11 15.44	303 4 "	"	V	47.065	12 10 31.51	17 59 0.70	17 3584
38	8.5	29.6	31.6	33.4	35.5	37.8	a	13 3.70	303 22 10.0	6.6	I	43.650	12 12 19.78	17 42 4.74	17 3592
39	8.6	14.6	16.7	18.9	21.0	23.4	c	13 18.92	304 16 10.0	7.4	III	43.510	12 12 34.99	16 48 4.95	16 3432
40	6.5	47.4	49.5	51.7	53.8	56.0	c	17 51.68	306 4 10.0	7.2	III	43.455	12 17 7.74	—15 0 0.99	—14 3500
41	8.5	4.9	6.9	9.2	11.4	13.5	c	19 9.18	304 56 10.0	7.1	III	44.925	12 18 25.26	—16 7 35.80	—15 3459
42	8.6	1.7	3.8	6.0	8.2	10.3	c	20 6.00	303 26 10.0	6.9	V (B)	43.710	12 19 22.10	17 41 17.54	17 3615
43	8.6	19.9	22.0	24.2	26.5	28.6	c	20 24.24	303 26 "	"	V (B)	41.710	12 19 40.35	17 41 55.93	17 3617
44	8.6	36.3	38.6	40.6	42.5	44.4	e	21 10.47	303 26 "	"	VII A	38.200	12 20 26.58	17 36 34.55	17 3619
45	8.0	17.9	20.2	22.2	24.4	26.5	c	23 22.24	304 12 10.0	6.0	VI	32.730	12 22 38.35	16 55 32.71	16 3466
46	9.1	5.0	7.0	8.9	10.8	13.0	a	23 38.92	304 12 "	"	I A	34.870	12 22 55.03	16 51 36.14	16 3467
47	8.0	10.5	12.7	14.8	17.0	19.1	c	26 14.82	304 40 10.0	6.6	III	42.990	12 25 30.93	16 24 13.53	16 3477
48	8.2	22.7	24.8	27.0	29.2	31.3	c	27 27.00	304 10 10.0	6.6	III	43.800	12 26 43.12	16 53 59.34	16 3483
49	8.7	2.7	5.0	7.2	9.4	11.4	c	28 7.14	303 14 10.0	6.1	V A	40.420	12 27 23.28	17 47 52.60	17 3645
50	8.7	26.8	28.9	33.2	34.8	37.5	c_4 d_3	28 24.55	303 14 "	"	VI C	45.160	12 27 40.70	—17 56 2.63	—17 3647
51	8.5	34.3	36.6	38.5	40.5	42.4	e	29 8.51	303 54	...	....	....	12 28 24.65	—17 14 28	—16 3492
52	6.0	9.7	11.9	14.0	16.3	18.4	c	31 14.06	304 50 10.0	6.9	III B	45.860	12 30 30.18	16 16 31.31	16 3499
53	8.5	21.8	23.8	26.0	28.2	30.4	c	32 26.04	304 50 "	"	III	48.975	12 31 42.17	16 12 17.62	15 3506
54	8.7	4.1	6.3	8.4	10.8	12.9	c	34 8.50	303 4 10.0	6.8	III	46.470	12 33 24.68	17 59 10.82	17 3667
55	8.6	1.5	3.4	5.4	7.3	9.6	a	35 35.60	303 4 "	"	I	46.970	12 34 51.78	17 59 0.57	17 3680
56	8.6	41.9	44.0	45.7	47.7	50.0	a	38 15.86	304 2 10.0	5.9	I	43.360	12 37 32.03	17 2 7.16	16 3522
57	8.8	42.5	44.6	46.7	48.9	51.2	c	38 46.78	303 20 10.0	6.4	III	46.800	12 38 2.97	17 43 3.50	17 3691
58	7.4	17.3	19.4	21.7	23.9	25.9	c	39 21.64	303 20 "	"	V	43.170	12 38 37.84	17 44 13.48	17 3694
59	9.0	40.5	42.6	44.8	47.0	49.0	c	41 44.78	304 54 10.0	5.6	III B	50.240	12 41 0.94	—16 11 6.85	—15 3528

Reduction Elements. Zone III.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
May 6.3....	+0.281	—0.111	—0.171	+0.290	—0.090	—0.195
6.4....	+0.298	—0.068	—0.219			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ν Hydrae		b² Hydrae		β Crateris		γ Crateris		ψ Virginis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	305 24 8.20		301 28 8.45		298 48 8.55		303 56 8.35		312 4 8.40	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	42.740	4 53.10		5 19.38	42.180	4 42.56	43.485	5 7.73	43.390	5 5.98
II	Red. to Mer......	.750	0.16		0.19	.215	0.22	.525	0.17	.440	0.09
VI	Inclination	.785		44.130	—0.45	.250		.555		.470	
VII	Refraction	.800	1 18.8	.150	1 31.4	.230	1 41.9	.565	1 23.4	.465	1 2.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ν Hydrae	10 45 25.55	11	+0.08	−57.52	305 27 42.7	36.4
b^2 Hydrae	10 49 20.19	11	+0.08	−57.54	301 31 56.2	36.6
β Crateris	11 7 28.55	11	+0.08	−57.49	298 51 9.4	36.1
γ Crateris	11 20 37.18	11	+0.08	−57.46	303 59 52.8	35.5
γ Cephei S. P.	11 35 56.60	11	−1.90	[−57.43]	64 0	....
ψ Virginis	12 49 53.11	11	+0.09	−57.54	312 8 12.0	35.9
43 H. Cephei S. P.	12 55 8.51	8	−5.32	[−57.76]	55 22	....

h 11.000 . . . . *dt* . . . . s −57.506

Hourly rate . . . . − 0.0096

Adopted Equator Point . . . . 321° 6′ 36″.10

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
10 45	30.042	69.8	68.3
11 40	30.048	67.8	66.6
12 40	30.054	66.8	65.4
13 5	30.056	66.3	65.2

Notes.

39. Images steady.

43 H. Cephei S. P. Image somewhat unsteady. Zone stopped by clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			302°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	s
303	+0.081	11 0	......	+13.239	+13.262	+13.284	+13.306	+13.328
304	0.081	11 30	+13.339	13.346	13.354	13.364	13.371	13.378
305	0.082	12 0	+13.475	13.470	13.462	13.456	13.448	13.441
306	0.082	12 30	......	13.604	13.582	13.560	+13.540	+13.517
307	+0.083	13 0	......	+13.748	+13.711	+13.677	......	......

APPARENT RIGHT ASCENSION.	$D =$ Z. D. N. to 1895.0						R					
	302°	303°	304°	305°	306°	307°	302° 30′	303°	304°	305°	306°	307°
h m	″	″	″	″	″	″	″	″	″	″	″	″
11 0	.....	+15.93	+15.67	+15.40	+15.13	+14.86	88.23	86.56	83.37	80.32	77.43	74.66
11 30	+17.13	16.89	16.65	16.41	16.15	15.90	88.39	86.72	83.52	80.46	77.57	74.80
12 0	+17.87	17.66	17.44	17.22	16.99	16.78	88.53	86.86	83.66	80.59	77.70	74.92
12 30	.....	18.20	18.02	17.83	+17.63	+17.44	88.63	86 96	83.75	80.69	77.79	75.01
13 0	.....	+18.53	+18.38	+18.23	.....	.....	88.74	87.06	83.85	80.78	77.88	75.09

1895 MAY 8. ZONE 112. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0.	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	......	47.0	49.0	50.9	52.7	55.1	a	9 20.69	305 38 10.0 12.1	III	46.560	11 8 35.82	−15 24 53.06	15 3223^1
2	......	16.8	19.0	21.1	23.3	25.5	c	9 21.14	305 38 " "	VI	45.525	11 8 36.27	15 25 13.39	15 3223^2
3	......	55.4	57.4	59.6	1.4	3.2	e	9 29.86	306 38 10.0 12.0	VII	40.645	11 8 45.01	14 26 44.68	14 3288
4	8.9	25.0	27.0	29.0	30.7	33.0	a	33 58.74	305 24 10.0 12.2	I B	50.420	11 33 13.92	15 40 54.01	15 3315
5	8.5	47.4	49.3	51.3	53.0	55.5	(a)	34 21.10	305 24 " "	I	46.925	11 33 36.29	15 38 47.20	15 3318
6	8.6	25.0	27.1	29.0	31.0	33.3	a	34 58.82	305 48 10.0 12.4	I	42.910	11 34 14.01	15 16 3.14	15 3322
7	8.5	43.0	45.1	47.4	49.6	51.7	c	38 47.36	304 30 10.0 11.6	III B	40.870	11 38 2.55	16 38 0.55	16 3310
8	8.2	45.6	47.6	49.8	52.1	54.2	c	39 49.86	304 30 " "	III	41.190	11 39 5.06	16 34 40.62	16 3315
9	8.0	14.7	16.8	19.0	21.2	23.3	c	41 19.00	305 32 10.0 11.6	III	45.150	11 40 34.20	15 31 21.90	15 3349
10	7.5	44.9	47.1	49.2	51.4	53.6	c	43 49.24	305 4 10.0 12.5	III	44.740	11 43 4.45	−15 59 30.57	−15 3356
11	8.0	28.1	30.3	32.4	34.6	36.8	c	44 32.44	305 4 " "	III B	45.290	11 43 47.65	−16 2 33.80	−15 3358
12	8.4	8.6	10.9	13.0	15.2	17.3	c	48 13.00	304 18 10.0 12.4	III	43.780	11 47 28.22	16 45 51.17	16 3346
13	8.6	21.8	23.9	26.1	28.3	30.5	c	49 26.12	304 18 " "	III C	47.020	11 48 41.35	16 51 15.73	16 3350
14	8.6	51.0	53.2	55.2	57.6	59.6	c	51 55.32	306 8 10.0 12.5	III	41.340	11 51 10.55	14 56 33.10	14 3435
15	8.4	48.6	50.7	52.9	55.1	57.2	c	52 52.90	305 10 10.0 12.0	III	43.645	11 52 8.13	15 53 51.60	15 3385
16	8.5	17.9	20.0	24.3	26.0	28.6	c_4 d_3	53 15.76	305 20 10.0 12.2	VI	43.940	11 52 30.99	15 43 45.86	15 3387
17		34.9	37.1	39.2	41.2	43.0	e	54 9.26	304 40 10.0 11.2	VII	43.585	11 53 24.50	−16 23 55.01	16 3366

Reduction Elements. Zone 112.

1895.	OBSERVED.			ADOPTED.		
	c	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
May 8.3....	+0.039	−0.149	−0.252	+0.039	0.149	−0.252

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

CIRCLE READING.	β Crateris		δ Crateris		γ Crateris		κ Crateris		Lalande 22585	
	° ′ ″ 298 48 11.20		° ′ ″ 306 50 11.20		° ′ ″ 303 56 11.20		° ′ ″ 309 16 11.45		° ′ ″ 311 12 10.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	41.680	4 33.33	42.120	4 41.04	43.030	4 59.42	41.240	4 24.44		4 15.54
II Red. to Mer......	.710	0.22	.090	0.14	.080	0.42	.255	0.12	40.810	0.06
VI Inclination	.770		.165		.145		.300			0.36
VII Refraction	.790	1 40.4	.185	1 13.9	.140	1 22.2	.305	1 7.8		1 3.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
β Crateris...........	11 7 29.31	11	—0.28	—57.91	298 51 4.4	31.1
δ Crateris...........	11 15 5.34	11	—0.26	—58.00	306 53 38.5	31.1
γ Crateris...........	11 20 37.94	11	—0.26	—57.89	303 59 48.6	31.3
κ Crateris...........	11 22 52.06	11	—0.26	—57.94	309 19 28.2	30.2
Lalande 22585.....	11 56 21.28	11	—0.25	—58.02	311 15 23.0	30.2
4 H. Draconis.......	12 8 22.51	5	+0.41	[—57.96]	39 16	....

h
11.408..........*dt*.................... —57.952 s
Hourly rate 0.0000

Adopted Equator Point.......... 321 6 30.78 ° ′ ″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
11 10	29.826	72.8	71.1
12 0	29.859	71.6	70.0

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1895.0			
			304°	305°	306°	307°	304°	305°	306°	307°
°	s	h m	s	s	s	s	″	″	″	″
304	—0.264	11 0	......	+13.308	+13.330	+13.351	.....	+15.43	+15.15	+14.86
305	0.263	11 30	+13.375	13.383	13.390	13.397	+16.69	16.44	16.18	15.92
306	0.262	12 0	+13.478	+13.470	+13.463	+13.456	+17.48	+17.24	+17.02	+16.78
307	—0.259	.....	......	......	......	......	.....	.....	.....	.....

APPARENT RIGHT ASCENSION.	*R*			
	304° 30′	305°	306°	307°
h m	″	″	″	″
11 0	80.69	79.20	76.35	73.62
11 30	80.84	79.34	76.49	73.76
12 0	80.98	79.49	76.63	73.89

1895 MAY 9. ZONE 113. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	9.3	6.8	8.6	10.5	12.3	14.7	a	35 40.77	302	56	10.0	11.0	I	41.710	11 34 55.75	—18 8 34.12	—17 3436
2	9.0	36.0	38.0	39.9	41.8	44.1	a	36 10.16	302	56	"	"	I B	41.405	11 35 25.14	18 11 53.89	17 3438
3	8.8	6.2	8.4	10.4	12.7	14.8	c	36 10.50	303	28	10.0	11.5	III	39.055	11 35 25.49	17 37 23.82	17 3439
4	9.0	47.0	49.2	51.2	53.0	54.8	e	36 21.00	303	14	10.0	11.2	VII A	40.965	11 35 35.99	17 47 33.37	17 3441
5	9.3	43.5	45.6	47.8	49.6	51.4	e	37 17.52	303	14	"	"	VII B	44.335	11 36 32.50	17 52 57.42	17 3444
6	8.8	22.6	24.7	26.7	28.7	30.6	e	37 57.02	305	54	10.0	11.5	V	41.740	11 37 12.02	15 10 26.15	14 3382
7	8.6	6.3	8.5	10.4	12.4	14.3	e	38 40.65	305	14	10.0	11.2	V	41.095	11 37 55.65	15 50 40.38	15 3337
8	7.8	......	39.3	41.3	43.1	45.0	e	39 11.61	306	34	10.0	11.8	VII	45.285	11 38 26.62	14 29 16.52	14 3388
9	8.7	10.2	12.3	14.4	16.2	18.0	e	39 44.62	306	10	10.0	11.2	VII	43.010	11 38 59.63	14 54 1.47	14 3391
10	8.8	16.5	18.6	20.8	22.9	25.0	c	44 20.76	306	36	10.3	12.5	III	46.225	11 43 35.78	—14 26 57.39	—14 3413
11	6.3	54.9	57.0	59.1	1.4	3.5	c	45 59.18	305	46	10.0	11.0	III	41.590	11 45 14.20	—15 18 29.29	—15 3363
12	9.0	4.0	6.1	8.1	10.6	12.7	c	47 8.30	305	30	10.0	11.7	III	43.995	11 46 23.33	15 33 43.49	15 3368
13	8.7	18.3	20.3	22.3	24.0	26.4	a	48 51.98	305	56	10.0	11.6	I	45.970	11 48 7.01	15 7 4.01	14 3427
14	8.5	8.3	10.4	12.5	14.7	16.9	c	49 12.56	305	36	10.0	11.0	III C	46.245	11 48 27.59	15 33 27.12	15 3376
15	9.4	53.0	55.2	57.3	59.4	1.7	c	49 57.32	305	36	"	"	V	41.620	11 49 12.35	—15 28 29.53	—15 3377

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
16	8.9	52.1	54.3	56.4	58.7	0.7	c	50 56.44	305 36 10.0 11.0	III B 44.680	11 50 11.47	−15 30 44.21	−15 3381
17	9.1	7.9	10.1	12.3	14.5	16.6	c	51 12.28	305 36 " "	V A 46.515	11 50 27.31	15 23 40.66	15 3382
18	8.8	29.6	31.7	33.5	35.4	37.6	a	55 3.34	305 36 " "	I B 47.930	11 54 18.39	15 29 41.34	15 3396
19	8.7	26.5	28.7	30.2	32.2	34.4	a	56 0.06	306 24 10.0 11.2	I 42.750	11 55 15.10	14 40 4.76	14 3443
20	9.3	1.9	4.1	6.1	8.4	10.5	c	56 6.20	306 24 " "	III B 42.425	11 55 21.24	−14 43 25.32	−14 3444
21	8.4	44.1	46.3	48.3	50.3	52.1	e	56 18.57	305 46 10.0 11.6	VII 42.000	11 55 33.62	−15 18 21.62	−15 3402
22	8.7	23.3	25.3	27.2	29.0	31.3	a	58 57.18	304 20 10.0 11.5	I 43.450	11 58 12.23	16 43 56.51	16 3380
23	9.7	14.6	16.7	18.8	21.0	23.1	c	59 18.84	305 0 10.0 11.8	III B 50.095	11 58 33.90	16 5 1.35	15 3407
24	8.7	17.1	19.0	21.0	22.8	25.2	a	5 50.71	306 12 10.0 11.8	I 43.240	12 5 5.78	14 51 55.32	14 3468
25	8.6	19.5	21.6	23.9	26.1	28.2	c	6 23.86	306 42 10.0 11.7	III 40.945	12 5 38.93	14 22 38.70	14 3469
26	9.0	39.2	41.3	43.6	45.8	48.0	c	7 43.58	304 12 10.0 11.0	III 40.835	12 6 58.66	16 52 47.63	16 3412
27	9.1	35.4	37.7	39.9	42.0	44.2	c	8 39.84	305 0 10.0 11.0	III 45.060	12 7 54.92	16 3 24.33	15 3433
28	8.1	22.8	24.9	27.0	29.3	31.5	c	9 27.10	305 38 10.6 12.0	III 45.490	12 8 42.19	15 25 13.60	15 3435
29	8.8	59.7	1.8	4.0	6.2	8.3	c	10 4.00	305 38 " "	III C 44.745	12 9 19.09	15 31 54.58	15 3436
30	9.1	21.7	23.8	26.0	28.3	30.4	c	13 26.04	304 30 10.0 11.3	III 45.130	12 12 41.14	−16 33 24.03	−16 3433
31	9.3	55.0	57.4	59.5	1.8	3.8	c	13 59.50	305 50 9.8 11.0	III B 49.060	12 13 14.59	−15 15 19.08	−15 3449
32	8.4	30.0	32.2	34.4	36.6	38.7	c	14 34.38	305 50 " "	III 43.300	12 13 49.48	15 13 55.79	14 3489
33	9.3	45.9	47.9	49.8	51.7	54.0	a	16 19.59	305 50 " "	I 48.935	12 15 34.69	15 12 7.04	14 3495
34	8.5	24.7	26.9	29.0	31.2	33.3	c	16 29.02	305 50 " "	III B 48.460	12 15 44.12	15 15 30.48	15 3452
35	8.0	25.4	27.4	29.6	31.6	33.8	c	18 29.56	306 54 10.0 10.9	III A 43.845	12 17 44.65	14 6 27.77	13 3528
36	9.2	39.9	42.0	44.3	46.5	48.5	c	18 44.24	306 54 " "	V B 40.040	12 17 59.33	14 14 9.46	13 3529
37	7.8	30.2	32.3	34.4	36.6	38.7	c	21 34.44	306 44 10.4 12.0	III B 41.780	12 20 49.54	14 23 35.35	14 3510
38	8.6	4.2	6.4	8.4	10.7	12.8	c	22 8.50	306 44 " "	III C 44.390	12 21 23.60	14 25 58.15	14 3515
39	9.1	1.5	3.7	5.8	8.0	10.2	c	23 5.84	306 44 " "	III A 39.665	12 22 20.94	14 17 47.39	14 3518
40	8.7	35.2	37.4	39.5	41.6	43.7	c	23 39.48	305 56 10.0 11.1	V A 40.120	12 22 54.60	−15 5 41.39	−14 3521
41	9.1	3.7	5.8	7.8	10.2	12.3	c	24 7.96	305 56 " "	V B 38.140	12 23 23.08	−15 12 47.94	−14 3524
42	9.0	53.7	55.9	58.0	0.2	2.4	c	25 58.04	306 18 10.0 11.5	III 42.600	12 25 13.16	14 46 7.08	14 3529
43	9.1	21.2	23.3	25.4	27.5	29.7	c	27 25.42	306 58 10.0 11.0	III C 50.390	12 26 40.53	14 10 2.79	13 3547
44	8.9	2.8	4.8	6.6	8.5	10.7	a	29 36.26	306 58 " "	I 45.405	12 28 51.38	14 5 11.08	13 3557
45	9.2	20.4	22.7	24.9	27.0	29.2	c	30 24.84	304 50 10.0 11.2	III B 50.640	12 29 40.00	16 14 50.25	15 3500
46	9.2	0.5	2.8	4.8	6.9	9.1	c	31 4.82	305 32 10.0 11.2	V 46.465	12 30 19.97	15 30 55.03	15 3501
47	8.6	51.8	54.0	56.2	58.4	0.5	c	31 56.18	306 12 11.0 11.8	III 43.370	12 31 11.32	14 51 51.50	14 3541
48	9.4	48.9	51.0	53.1	55.3	57.5	c	34 53.16	305 28 10.0 10.9	III 42.950	12 34 8.33	15 36 2.17	15 3511
49	8.4	10.0	12.0	14.3	16.5	18.6	c	36 14.28	305 28 " "	III 43.510	12 35 29.45	15 35 51.33	15 3513
50	9.3	4.5	6.8	8.9	11.1	13.2	c	39 8.90	304 52 10.0 10.7	III 42.950	12 38 24.08	−16 12 3.53	−15 3521
51	8.7	57.5	59.5	1.5	3.7	5.8	c	41 1.60	306 10 10.0 11.5	III B 41.475	12 40 16.77	−14 57 41.65	−14 3570
52	8.3	26.9	29.1	31.2	33.5	35.7	c	41 31.28	306 10 " "	III C 46.505	12 40 46.45	14 59 18.00	14 3572
53	7.9	56.6	58.8	1.0	3.2	5.2	c	42 0.96	306 10 " "	III 44.040	12 41 16.13	14 53 38.55	14 3573
54	8.2	57.5	59.7	1.8	3.9	6.0	c	44 1.78	305 58 10.0 11.5	III C 48.970	12 43 16.96	15 10 30.99	14 3581
55	9.5	23.3	25.4	27.7	29.9	32.0	c	44 27.66	305 58 " "	V 43.780	12 43 42.84	15 5 44.20	14 3583
56	7.4	13.2	15.3	17.4	19.5	21.6	c	45 17.40	306 36 10.0 11.5	III B 40.340	12 44 32.57	14 32 1.93	14 3587
57	9.0	57.3	59.5	1.6	3.8	5.9	c	47 1.62	306 36 " "	III C 48.340	12 46 16.79	14 32 41.19	14 3593
58	8.0	35.0	37.2	39.3	41.6	43.7	c	48 39.36	306 36 " "	III A 40.840	12 47 54.54	14 25 23.52	14 3596
59	8.4	1.5	3.6	5.8	8.0	10.1	c	49 5.80	304 46 9.7 10.0	V 44.890	12 48 21.02	16 17 26.52	16 3558
60	8.2	1.7	3.7	5.5	7.5	9.8	a	51 35.54	304 42 10.0 11.3	I 46.125	12 50 50.77	−16 21 1.03	−16 3565
61	9.3	57.0	59.2	1.4	3.1	5.0	e	55 31.47	305 38 10.0 10.5	VII 48.280	12 54 46.70	−15 24 18.23	−15 3573
62	9.4	59.6	1.8	3.9	6.1	8.4	c	57 3.96	305 38 " "	V B 49.880	12 56 19.19	15 27 0.86	15 3579
63	9.4	6.9	9.0	11.3	13.5	15.6	c	58 11.26	305 38 " "	V B 43.035	12 57 26.50	15 29 12.09	15 3584
64	9.6	29.3	30.9	35.0	37.1	39.3	b_2 c_3	59 39.33	305 54 10.0 10.7	III A 40.330	12 58 54.56	15 7 34.32	14 3632
65	9.1	46.1	48.0	50.1	52.3	54.6	c	59 50.22	305 54 " "	V B 38.310	12 59 5.46	15 14 41.75	14 3634
66	8.9	47.5	49.7	51.8	54.2	56.3	c	0 51.90	306 30 10.3 12.3	V 43.205	13 0 7.12	14 33 51.54	14 3640
67	9.4	56.9	59.1	1.2	3.2	4.9	e	1 31.55	306 46 10.0 11.2	V 43.590	13 0 46.76	14 17 44.08	14 3643
68	8.0	20.5	22.8	24.8	26.7	28.5	e	1 55.15	306 46 " "	VII C 47.700	13 1 10.36	14 22 51.02	14 3644
69	8.8	54.7	56.8	58.8	1.0	3.0	c	3 58.86	306 16 10.0 11.0	III 44.215	13 3 14.09	14 47 32.80	14 3650
70	9.4	34.6	36.9	38.8	40.7	42.5	e	4 9.11	306 16 " "	VII B 49.490	13 3 24.34	−14 49 5.65	−14 3651
71	9.5	33.8	36.2	38.2	40.5	42.6	c	7 38.26	305 44 10.0 11.0	III 43.710	13 6 53.53	−15 19 43.42	−15 3615
72	8.5	59.9	1.8	3.7	5.6	8.0	a	9 33.65	305 4 10.0 10.9	I B 48.580	13 8 48.94	[16 1 24.86]	15 3621
73	9.4	39.0	41.0	42.9	44.8	47.2	a	10 12.83	305 4 " "	I 44.200	13 9 28.12	15 59 34.95	15 3622
74	9.3	12.9	15.0	16.9	18.7	21.1	a	12 46.59	306 20 10.0 11.6	I B 50.490	13 12 1.85	14 44 44.11	14 3681
75	8.6	21.4	23.5	25.4	27.2	29.3	a	13 54.99	306 38 10.0 12.1	I 43.300	13 13 10.24	14 25 47.00	14 3688
76	8.9	6.7	8.8	10.6	12.5	14.9	a	14 40.30	306 50 10.0 11.6	I 45.890	13 13 55.55	14 12 56.95	13 3688
77	9.4	34.5	36.8	39.0	41.1	43.2	c	15 38.92	305 18 10.0 11.1	III A 45.300	13 14 54.23	15 41 58.22	15 3643
78	9.0	1.1	3.3	5.5	7.7	9.8	c	16 5.48	305 18 " "	III C 44.500	13 15 20.79	15 51 54.93	15 3647
79	8.9	43.9	46.0	48.2	50.4	52.5	c	16 48.20	305 38 10.0 11.8	V 41.720	13 16 3.50	15 26 20.57	15 3652
80	9.4	12.0	14.1	16.4	18.5	20.7	c	17 16.34	305 38 " "	V A 43.200	13 16 31.64	−15 22 37.19	−15 3653
81	8.8	27.0	29.2	31.3	33.6	35.7	c	18 31.36	305 38 " "	III 48.110	13 17 46.67	−15 24 17.32	−15 3656
82	8.1	0.3	2.5	4.5	6.5	8.3	e	18 34.82	306 10 10.0 11.6	VII 44.330	13 17 50.11	14 53 29.09	14 3708
83	8.5	24.2	26.3	28.5	30.7	32.7	c	20 28.48	305 58 10.0 11.3	III 40.620	13 19 43.77	15 6 40.15	14 3717
84	9.1	35.0	37.2	39.5	41.6	43.6	c	21 39.38	306 48 10.0 11.5	III 41.590	13 20 54.64	14 16 19.07	14 3721
85	9.3	35.3	37.5	39.7	41.9	43.9	c	22 39.66	304 32 10.0 11.2	....	13 21 55.02	16 36 28	16 3666
86	9.7	15.6	17.8	19.9	22.2	24.2	c	23 19.94	304 32 " "	....	13 22 35.30	16 38 5	16 3667
87	9.0	54.0	56.1	58.3	0.5	2.6	c	23 58.30	304 32 " "	V (A) 40.620	13 23 13.66	16 29 29.01	16 3668
88	9.8	...	46.5	48.4	50.4	52.1	e	27 18.64	305 36 10.0 10.0	VII B 40.500	13 26 33.98	15 31 57.05	15 3684
89	9.0	25.6	27.7	29.9	32.0	34.1	c	28 29.86	306 28 10.0 11.1	V 43.650	13 27 45.16	14 35 39.85	14 3741
90	9.4	49.6	51.9	53.8	56.0	58.1	c	29 53.88	306 42 10.0 11.3	III B 43.030	13 29 9.17	−14 25 4.26	−14 3745

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
91	9.2	24.3	26.2	28.2	29.9	32.4	(a)	30 57.82	306 42 10.0 11.3	III A 41.370	13 30 13.11	—14 19 7.47	—14 3749
92	8.7	2.3	4.5	6.7	8.8	10.8	c	31 6.62	306 42 " "	III C 42.925	13 30 21.92	14 28 18.99	14 3750
93	8.0	51.2	53.1	55.1	57.0	59.4	a	32 25.00	305 8 10.0 10.5	I 42.150	13 31 40.36	15 56 10.92	15 3705
94	9.0	31.4	33.3	35.3	36.9	39.5	a	33 4.88	306 56 10.0 10.8	III C 46.440	13 32 20.17	14 13 10.86	13 3734
95	8.2	20.5	22.7	24.9	27.0	29.1	c	33 24.84	306 56 " "	III A 41.790	13 32 40.13	14 4 58.65	13 3737
96	9.1	11.2	13.5	15.7	17.7	19.9	c	34 15.60	306 56 " "	III A 44.120	13 33 30.89	14 4 13.79	13 3739
97	9.1	58.7	0.8	3.0	5.3	7.5	c	35 3.06	304 52 10.0 11.5	III 45.745	13 34 18.44	16 9 2.17	15 3713
98	8.9	57.7	59.8	1.9	4.1	6.4	c	37 1.98	305 24 10.5 11.8	III 42.010	13 36 17.36	15 40 11.74	15 3720
99	9.4	11.3	13.6	15.6	17.8	20.0	c	38 15.66	305 24 " "	III B 41.190	13 37 31.05	15 43 41.02	15 3725
100	6.	46.2	48.4	50.5	52.7	55.0	c	39 50.56	305 24 " "	III 40.770	13 39 5.95	—15 40 35.01	—15 3731
101	9.1	56.9	59.1	1.1	3.4	5.6	c	42 1.22	306 28 10.0 11.1	III 42.000	13 41 16.56	—14 36 8.79	—14 3797
102	9.2	47.2	49.3	51.4	53.5	55.6	c	42 51.40	306 52 10.0 11.6	III A 40.950	13 42 6.72	14 9 12.83	13 3769
103	9.2	11.4	13.4	15.6	17.8	20.0	c	44 15.64	306 52 " "	III B 47.415	13 43 30.97	14 13 36.96	14 3806
104	9.0	37.4	39.6	41.9	44.0	46.1	c	44 41.80	306 52 " "	III C 50.500	13 43 57.13	14 15 50.61	14 3808
105	9.0	15.6	17.8	19.9	22.0	24.2	c	45 19.90	306 40 10.0 11.0	V B 49.620	13 44 35.24	14 24 55.49	14 3811
106	8.0	32.6	34.6	36.9	39.0	41.0	c	47 36.82	306 52 10.0 11.9	III 45.620	13 46 52.16	14 10 56.85	13 3782
107	9.3	22.8	25.0	27.1	29.4	31.5	c	48 27.16	306 52 " "	III B 42.910	13 47 42.50	14 15 2.46	14 3822
108	7.9	8.4	10.7	12.7	14.9	17.1	c	49 12.76	306 52 " "	III 47.740	13 48 28.10	14 10 15.85	13 3786
109	9.0	20.1	22.2	24.5	26.6	28.8	c	50 24.44	306 2 10.0 10.4	III 43.350	13 49 39.83	15 1 42.78	14 3827
110	9.1	5.0	7.3	9.4	11.5	13.6	c	51 9.36	306 46 10.0 11.4	III 41.675	13 50 24.71	—14 18 12.35	—14 3830
111	9.4	3.3	5.4	7.5	9.7	11.8	c	52 7.54	305 54 10.0 10.9	III 47.880	13 51 22.94	—15 8 15.61	—14 3833
112	9.3	55.5	57.7	59.8	2.0	4.1	c	54 59.82	306 12 10.7 11.7	III 41.930	13 54 15.22	14 52 7.67	14 3845
113	8.1	44.2	46.5	48.6	50.7	52.8	c	55 48.56	306 40 10.7 12.1	III B 39.880	13 55 3.94	14 27 59.20	14 3846
114	9.0	27.1	29.3	31.4	33.6	35.7	c	56 31.42	306 40 " "	III 47.090	13 55 46.80	14 22 26.91	14 3849
115	8.9	49.2	51.5	53.7	55.9	58.0	c	57 53.66	305 40 10.0 11.1	III 40.730	13 57 9.10	15 24 32.19	15 3792
116	9.1	45.7	47.8	49.6	51.4	53.7	a	59 19.28	306 30 10.5 12.0	I 45.910	13 58 34.68	14 32 49.03	14 3860
117	7.8	13.0	15.0	16.8	18.7	21.1	a	59 46.56	306 30 " "	I A 46.265	13 59 1.96	14 29 27.68	14 3863
118	9.2	0.2	2.4	4.1	6.0	8.2	a	0 33.83	306 30 " "	I C 49.170	13 59 49.24	14 38 13.45	14 3866
119	9.1	3.1	5.6	7.6	9.8	11.9	c	1 7.60	306 20 10.0 11.9	III B 46.160	14 0 23.02	14 45 58.90	14 3868
120	9.2	29.1	31.2	33.2	35.5	37.7	c	1 33.34	306 20 " "	V B 43.040	14 0 48.76	—14 46 58.91	—14 3870
121	9.3	8.5	10.8	12.8	14.7	16.5	e	1 43.09	306 20 " "	VII 45.635	14 0 58.51	—14 42 55.59	—14 3871
122	9.1	10.0	12.2	14.3	16.5	18.5	c	3 14.30	306 20 " "	III B 42.080	14 2 29.72	14 47 16.74	14 3880
123	6.	2.8	5.0	7.1	9.4	11.5	c	6 7.16	305 14 10.0 11.6	III 43.030	14 5 22.66	15 49 47.21	15 3817
124	9.7	46.0	48.3	50.3	52.5	54.6	c	7 50.34	305 36 10.0 11.3	III A 44.865	14 7 5.82	15 23 56.05	15 3824
125	8.9	11.1	13.3	15.4	17.7	19.7	c	8 15.44	305 36 " "	V C 41.040	14 7 30.93	15 34 50.61	15 3826
126	9.3	6.7	8.9	10.9	13.0	14.8	e	8 41.12	305 8 10.0 11.2	VII A 40.390	14 7 56.64	15 53 23.14	15 3827
127	9.3	54.6	56.8	58.8	0.8	2.5	e	9 28.94	305 8 " "	VII C 45.130	14 8 44.46	16 1 32.62	15 3831
128	8.7	2.5	4.6	6.9	8.9	11.0	c	11 6.78	305 30 10.0 11.5	V B 43.070	14 10 22.29	15 36 58.65	15 3837
129	9.4	56.4	58.8	0.9	3.0	5.4	c	12 0.90	305 30 " "	III B 48.405	14 11 16.41	15 35 15.83	15 3838
130	9.0	0.9	3.0	5.0	7.4	9.6	c	13 5.18	305 30 " "	III 43.190	14 12 20.69	—15 33 41.87	—15 3842
131	9.0	46.4	48.7	50.8	53.0	55.0	c	17 50.78	305 46 10.0 11.6	V 44.670	14 17 6.29	—15 17 11.95	—15 3859
132	9.1	59.5	1.7	3.9	6.2	8.4	c	19 3.94	305 30 10.0 10.5	V A 41.580	14 18 19.47	15 30 57.30	15 3861
133	8.0	38.8	40.9	42.8	44.8	46.7	e	19 13.09	305 30 " "	VII C 47.185	14 18 28.63	15 38 50.46	15 3862
134	......	36.3	38.5	40.6	42.8	44.9	c	22 40.62	305 42..........	....	14 21 56.16	—15 21 50	—15 3875

Reduction Elements. Zone 113.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
May 9.3....	+0.057	—0.150	—0.266	+0.087	—0.082	—0.266
9.5....	+0.117	—0.013				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		γ Crateris		κ Crateris		θ Crateris		γ Corvi		μ Virginis		α Librae	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	303 56 9.70		309 16 11.55		311 48 10.75		304 4 11.05		315 50 10.55		305 26 10.50	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.....	43.075	4 59.40	41.195	4 23.44	45.695	5 49.79		5 51.29	42.590	4 50.46	43.200	5 2.17
II	Red. to Mer......	.075	0.17	.205	0.12	.705	0.09	45.780	0.14	.640	0.05	.220	0.15
VI	Inclination	.120		.240		.740		.805	—0.18	.650		.280	
VII	Refraction.......	.120	1 21.8	.250	1 7.4	.760	1 1.6	.825	1 21.4	.645	53.8	.270	1 17.8

		15 Librae		γ Scorpii		β Librae	
		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	310 2 10.90		296 10 10.45		312 2 10.05	
		r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	46.180	5 58.94		5 46.27	44.230	5 21.33
II	Red. to Mer......		0.12	45.490	0.22	.220	0.09
VI	Inclination	.200	—0.12	.565	—0.18	.260	
VII	Refraction.......	.230	1 6.0	.570	1 52.4	.255	1 1.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Crateris	11 20 38.20	11	−0.19	−58.23	303 59 47.5	30.2
κ Crateris	11 22 52.28	11	−0.17	−58.25	309 19 27.7	29.7
ϑ Crateris	11 32 21.47	11	−0.17	−58.21	311 52 59.0	31.1
γ Corvi	12 11 24.65	11	−0.19	−58.21	304 8 40.9	30.4
43 H. Cephei S. P	12 55 7.78	7	−3.45	[−58.24]	55 22	....
μ Virginis	14 38 32.48	11	−0.16	−58.29	315 54 7.3	30.5
α Librae	14 46 5.06	11	−0.18	−58.23	305 29 55.0	32.1
15 Librae	14 52 5.15	10	−0.17	−58.29	310 7 3.8	29.9
γ Scorpii	14 58 56.42	8	−0.21	−58.18	296 14 4.4	31.3
β Librae	15 12 22.28	11	−0.17	−58.23	312 6 29.9	30.5

h 11.612 . . . . *dt* . . . . s −58.225

Hourly rate . . . . − 0.0058

Adopted Equator Point . . . . 321° 6′ 30.63″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
11 16	29.768	73.8	72.4
12 1	29.778	73.1	72.1
13 10	29.786	71.7	70.9
14 4	29.776	70.9	69.9
14 39	29.780	71.0	70.0
15 13	29.776	69.7	68.5

Notes.

γ Crateris. Images very steady.
83. Close double.
133. Clouds after this.
134. Cloudy.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
303	−0.190
304	0.188
305	0.185
306	0.183
307	−0.180

APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
	303°	304°	305°	306°	307°	308°
h m	s	s	s	s	s	s
11 30	+13.373	+13.381	+13.390	+13.397	+13.404	......
12 0	+13.489	13.482	13.475	13.468	13.461	+13.453
12 30	......	13.595	13.573	13.552	13.530	13.509
13 0	......	13.716	13.680	13.645	13.610	13.575
13 30	......	+13.845	13.795	13.747	13.699	13.650
14 0	......	......	13.917	13.855	13.795	+13.734
14 30	......	......	+14.043	+13.970	+13.897	......

APPARENT RIGHT ASCENSION.	*D* = Z. D. N. to 1895.0						*R*					
	303°	304°	305°	306°	307°	308°	302° 30′	303° 30′	304° 30′	305° 30′	306° 30′	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
11 30	+16.97	+16.71	+16.46	+16.20	+15.94	.....	86.68	83.44	80.39	77.46	74.70	72.03
12 0	+17.74	17.51	17.28	17.04	16.80	+16.57	86.72	83.48	80.43	77.50	74.73	72.06
12 30	.....	18.11	17.90	17.69	17.48	17.27	86.82	83.58	80.52	77.59	74.82	72.14
13 0	.....	18.45	18.28	18.11	17.94	17.75	86.94	83.70	80.63	77.70	74.92	72.24
13 30	.....	+18.59	18.45	18.31	18.18	18.04	87.02	83.77	80.70	77.77	74.99	72.31
14 0	.....	.....	18.39	18.29	18.18	+18.09	87.10	83.85	80.78	77.84	75.06	72.38
14 30	.....	.....	+18.09	+18.04	+17.98	.....	87.08	83.83	80.76	77.82	75.04	72.36

1895 MAY 18. ZONE 114. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.5	17.7	19.7	21.6	23.4	25.7	a	55 51.47	305 2 10.0	8.8	I	44.265	11 55 2.15	−16 1 41.71	−15 3399
2	8.6	53.7	56.0	58.1	0.2	2.3	c	55 58.06	305 2 "	"	III C	47.790	11 55 8.74	16 7 1.14	15 3400
3	9.2	48.2	50.3	52.5	54.7	56.7	c	10 52.48	305 40 10.0	9.2	III	46.530	12 10 3.19	15 22 56.05	15 3437
4	9.0	58.7	1.0	3.1	5.3	7.5	c	12 3.12	305 40 "	"	III	48.420	12 11 13.84	15 22 19.75	15 3440
5	8.2	0.0	2.0	4.1	5.8	8.2	a	13 33.93	304 44 10.0	8.9	I B	41.630	12 12 44.66	16 23 46.50	16 3434
6	9.2	33.9	36.0	38.3	40.4	42.6	c	13 38.24	304 44 "	"	III A	43.920	12 12 48.97	16 16 34.36	16 3435
7	8.8	19.3	21.4	23.6	25.8	27.9	c	14 23.60	304 44 "	"	III A	45.140	12 13 34.33	16 16 10.92	16 3439
8	8.3	28.8	30.8	32.7	34.5	36.8	a	16 2.33	306 48 10.0	9.3	I	41.190	12 15 13.05	14 16 35.22	14 3494
9	8.9	19.1	21.1	23.3	25.4	27.6	c	18 23.30	306 36 10.0	9.0	III	40.475	12 17 34.02	14 28 49.58	14 3503
10	8.9	9.6	11.7	13.9	16.0	18.2	c	20 13.88	306 6 10.0	9.2	III	45.505	12 19 24.61	−14 57 14.22	−14 3509
11	8.8	3.6	5.7	7.9	10.0	12.2	c	21 7.86	306 50 10.0	9.0	III	42.810	12 20 18.58	−14 14 4.04	−13 3533
12	7.9	19.4	21.5	23.6	25.8	28.1	c	23 23.68	303 22 10.0	9.0	III	46.990	12 22 34.45	17 40 53.28	17 3628
13	9.0	2.9	5.0	7.3	9.5	11.7	c	24 7.28	303 22 "	"	III B	46.390	12 23 18.06	17 44 18.79	17 3632
14	7.5	42.1	44.2	46.3	48.2	50.0	e	24 16.48	305 38 10.0	8.9	VII B	49.750	12 23 27.22	15 27 7.76	15 3475
15	8.9	38.4	39.9	44.1	46.4	48.6	b_2 c_3	25 48.55	303 40 10.0	8.5	I	45.575	12 24 59.33	17 23 19.51	17 3636
16	7.9	52.5	54.5	56.4	58.2	0.5	a	27 26.15	305 54 10.0	8.5	III	44.060	12 26 36.90	15 9 42.33	14 3530
17	9.0	43.0	44.9	47.2	49.5	51.5	c	27 47.22	306 22 10.0	8.6	V B	49.590	12 26 57.96	−14 43 8.95	−14 3532

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″	r	h m s	° ′ ″	″
18	8.0	26.6	28.7	30.8	33.0	35.2	c	28 30.86	304 58 10.0	8.8	V 41.870	12 27 41.63	−16 6 26.57	−15 3497
19	9.3	24.4	26.6	28.7	31.0	33.1	c	29 28.76	304 36 10.0	9.0	III A 38.825	12 28 39.54	16 26 11.61	16 3495
20	7.9	57.5	59.9	1.7	3.7	5.5	e	29 31.83	304 36 "	"	VII B 42.190	12 28 42.61	−16 31 35.31	−16 3496
21	8.0	39.6	41.7	43.8	45.8	47.6	e	30 13.98	305 12 10.0	8.7	VII A 45.030	12 29 24.75	−15 48 10.76	−15 3498
22	8.9	10.6	12.6	14.9	17.2	19.2	c	31 14.90	305 12 "	"	V C 39.610	12 30 25.67	15 59 35.85	15 3502
23	8.8	5.3	7.5	9.7	11.8	13.9	c	32 9.64	305 12 "	"	V A 39.150	12 31 20.41	15 50 3.63	15 3504
24	8.4	13.3	15.6	17.6	19.8	22.0	c	33 17.66	306 46 10.0	8.9	III 42.400	12 32 28.40	14 18 11.31	14 3548
25	7.0	46.5	48.5	50.3	52.2	54.5	a	34 20.52	303 26 10.0	9.5	III B 40.950	12 33 31.33	17 42 2.07	17 3668
26	9.0	28.3	30.5	32.8	35.0	37.2	c	34 32.76	303 26 "	"	III A 38.160	12 33 43.57	17 36 27.16	17 3669
27	8.6	25.2	27.3	29.4	31.8	33.9	c	35 29.52	303 26 "	"	III 43.245	12 34 40.33	17 38 3.88	17 3679
28	8.0	19.6	21.6	23.5	25.3	27.6	a	37 53.16	306 30 10.0	9.2	I A 39.100	12 37 3.92	14 32 0.24	14 3557
29	8.1	56.1	58.3	0.5	2.7	4.7	c	38 0.46	306 30 "	"	III C 40.210	12 37 11.22	14 41 20.43	14 3559
30	8.8	47.4	49.5	51.7	53.8	56.0	c	38 51.68	306 46 10.0	9.0	III 42.430	12 38 2.43	−14 18 10.22	−14 3563
31	8.2	29.3	31.3	33.3	35.2	37.4	a	40 3.46	303 10 10.0	9.0	I B 43.795	12 39 14.29	−17 57 7.83	−17 3696
32	9.3	57.4	59.4	1.2	3.2	5.6	a	40 31.52	303 10 "	"	I 45.845	12 39 42.35	17 53 14.52	17 3699
33	8.9	34.4	36.5	38.6	40.9	43.1	c	43 38.70	304 14 10.0	8.5	III 45.070	12 42 49.52	16 49 26.29	16 3534
34	9.5	40.7	42.9	45.0	47.2	49.2	c	44 45.00	306 6 10.0	8.0	III 43.645	12 43 55.77	14 57 48.60	14 3584
35	8.1	20.5	22.5	24.4	26.2	28.6	a	46 54.34	304 42 10.0	8.3	I 42.220	12 46 5.16	16 22 19.32	16 3548
36	9.3	55.5	57.6	59.6	2.0	4.0	c	46 59.74	304 2 10.0	8.4	III B 45.845	12 46 10.58	17 4 25.78	16 3549
37	9.0	53.4	55.6	57.6	0.0	2.0	c	47 57.72	304 2 "	"	III B 45.475	12 47 8.56	17 4 32.78	16 3554
38	9.1	17.7	19.8	22.0	24.2	26.3	c	48 22.00	304 2 "	"	V 46.510	12 47 32.84	17 0 58.75	16 3555
39	9.4	55.0	57.3	59.4	1.5	3.6	c	50 59.36	304 2 "	"	III A 45.130	12 50 10.20	16 58 10.66	16 3563
40	9.2	39.9	42.2	44.3	46.6	48.7	c	51 44.34	304 2 "	"	III C 44.250	12 50 55.18	−17 8 8.83	−16 3566
41	8.0	4.3	6.4	8.6	10.7	12.9	c	53 8.58	304 16 10.0	9.2	III B 43.440	12 52 19.43	−16 51 10.25	−16 3572
42	8.1	55.4	57.5	59.6	1.8	4.1	c	53 59.68	304 16 "	"	III 44.665	12 53 10.53	16 47 32.58	16 3574
43	9.3	59.6	1.7	3.5	5.4	7.8	a	55 33.40	305 22 10.0	8.5	I 43.220	12 54 44.22	15 41 57.28	15 3572
44	9.1	34.3	36.5	38.7	40.8	42.8	c	55 38.62	305 22 "	"	V 45.245	12 54 49.44	15 41 18.43	15 3574
45	8.9	48.4	50.5	52.8	54.9	57.0	c	56 52.72	304 12 10.0	9.0	III 41.670	12 56 3.58	16 52 30.06	16 3582
46	9.4	58.5	0.8	2.9	4.9	7.1	c	58 2.84	305 22 10.0	9.0	III A 39.755	12 57 13.67	15 39 48.96	15 3583
47	8.6	48.9	51.0	53.2	55.4	57.5	c	58 53.20	305 22 "	"	III B 45.320	12 58 4.03	15 44 30.50	15 3588
48	7.0	7.2	9.3	11.4	13.6	15.8	c	59 11.46	305 22 "	"	V C 44.755	12 58 22.30	15 47 53.84	15 3589
49	9.5	26.5	28.6	30.8	32.8	35.2	c	0 30.78	306 4 10.0	9.0	III A 40.270	12 59 41.59	14 57 36.92	14 3636
50	9.4	48.9	51.2	53.5	57.5	59.2	c_3 d_2	0 49.04	306 4 "	"	V B 41.580	12 59 59.85	−15 3 40.16	−14 3638
51	9.0	6.5	8.7	10.7	13.0	15.1	c	4 10.80	305 26 10.0	8.3	III 42.790	13 3 21.64	−15 38 4.53	−15 3600
52	8.6	18.5	20.6	22.4	24.3	26.6	a	5 52.16	306 14 10.2	9.6	I 44.420	13 5 2.98	14 49 30.04	14 3657
53	7.5	1.3	3.5	5.2	7.0	9.5	a	6 35.23	304 30 10.0	8.9	I 45.030	13 5 46.12	16 33 23.48	16 3612
54	9.1	38.8	41.0	43.2	45.4	47.5	c	6 43.18	304 30 "	"	III B 43.605	13 5 54.07	16 37 4.97	16 3613
55	6.	28.9	31.0	33.2	35.3	37.5	c	7 33.18	305 24 10.0	9.1	III 44.470	13 6 44.03	15 39 31.57	15 3613
56	8.6	42.0	44.2	46.5	48.7	50.8	c	8 46.44	306 12 10.0	9.5	III B 41.230	13 7 57.28	14 55 45.25	14 3665
57	8.6	8.3	10.6	12.8	14.9	17.1	c	9 12.74	306 12 "	"	III 42.380	13 8 23.57	14 52 9.10	14 3668
58	9.0	59.8	2.0	4.0	6.0	7.9	e	9 34.05	304 10 10.0	9.1	V 44.290	13 8 44.96	16 53 38.19	16 3620
59	9.1	45.7	47.8	49.9	52.1	54.4	c	10 49.98	304 10 "	"	V B 45.460	13 10 0.89	16 56 29.73	16 3627
60	8.9	16.0	18.2	20.5	22.6	26.8	c_2 d_1	11 18.25	305 18 10.0	8.5	V 46.855	13 10 29.12	−15 44 45.79	−15 3628
61	9.2	31.6	33.7	35.8	38.2	40.3	c	12 35.92	305 52 10.0	9.1	III 45.500	13 11 46.77	−15 11 9.84	−14 3679
62	9.2	26.1	28.2	30.6	32.6	34.7	c	13 30.44	304 44 10.0	8.4	III 46.950	13 12 41.34	16 18 45.42	16 3633
63	8.0	9.5	11.6	13.7	15.9	18.0	c	14 13.74	304 28 10.0	9.2	V 41.670	13 13 24.65	16 36 26.94	16 3635
64	9.1	13.8	16.0	18.1	20.3	22.6	c	15 18.16	304 38 10.0	8.5	III 45.280	13 14 29.07	16 25 17.44	16 3638
65	9.4	36.2	38.5	40.5	42.7	47.0	c_2 d_1	15 38.43	306 46 10.0	8.5	V C 44.310	13 14 49.25	14 23 56.75	14 3695
66	8.2	7.2	9.3	11.5	13.6	17.8	c_2 d_1	16 9.32	306 46 "	"	V (A) 42.600	13 15 20.14	14 14 48.55	14 3698
67	9.1	7.8	10.0	11.7	13.5	15.8	a	17 41.55	305 26 10.0	8.5	III 41.020	13 16 52.43	15 38 36.59	15 3655
68	9.0	57.1	59.2	1.5	3.5	8.0	c_2 d_1	17 59.28	304 32 10.0	9.1	V C 46.590	13 17 10.21	16 37 18.55	16 3646
69	8.5	7.5	9.6	11.6	13.9	16.0	c	19 11.72	304 32 "	"	III A 42.140	13 18 22.64	16 29 2.77	16 3651
70	8.8	29.3	31.5	33.8	35.9	38.0	c	19 33.70	304 32 "	"	V C 48.870	13 18 44.63	−16 36 34.53	−16 3652
71	8.9	42.9	45.2	47.2	49.6	51.7	c	20 47.32	304 58 10.0	9.0	III 44.680	13 19 58.23	−16 5 26.95	−15 3661
72	9.5	59.4	1.6	3.8	6.0	8.3	c	21 3.82	304 58 "	"	V 49.220	13 20 14.73	16 3 59.71	15 3662
73	8.2	42.8	44.7	46.8	49.0	51.2	c	21 46.90	304 58 "	"	V B 42.690	13 20 57.82	16 9 19.08	15 3664
74	8.6	39.7	41.9	44.0	46.3	48.3	c	22 44.04	304 26 10.0	8.9	V 47.830	13 21 54.98	16 36 27.73	16 3666
75	9.4	20.3	22.4	24.6	26.7	28.7	c	23 24.54	304 26 "	"	V 42.840	13 22 35.48	16 38 3.39	16 3667
76	9.3	4.0	6.2	8.3	10.5	12.7	c	25 8.34	305 0 10.0	9.4	III 46.325	13 24 19.26	16 2 54.43	15 3676
77	8.1	4.6	6.7	9.0	11.0	13.3	c	26 8.92	305 18 10.0	9.3	III A 44.140	13 25 19.83	15 42 21.01	15 3680
78	8.4	29.0	30.9	33.1	35.4	37.5	c	26 33.18	305 18 "	"	V B 39.860	13 25 44.10	15 50 11.55	15 3682
79	8.6	40.2	42.4	44.6	46.7	48.9	c	27 44.56	304 36 10.0	9.0	III 44.665	13 26 55.51	16 27 27.23	16 3684
80	8.7	27.5	29.8	31.8	33.7	35.5	e	28 1.90	305 2 10.0	8.6	VII 41.690	13 27 12.83	−16 2 22.86	−15 3692
81	8.8	32.9	35.1	37.2	39.4	41.6	c	29 37.24	305 14 10.0	9.4	III B 45.200	13 28 48.17	−15 52 28.69	−15 3694
82	8.7	2.5	4.6	6.6	8.9	11.1	c	30 6.74	305 14 "	"	III 47.220	13 29 17.67	15 48 35.79	15 3695
83	8.7	8.1	10.2	12.4	14.6	16.7	c	32 12.40	306 20 10.0	8.6	III 47.370	13 31 23.28	14 42 29.96	14 3755
84	8.2	20.7	22.7	25.1	27.1	29.3	c	33 24.98	306 20 "	"	III B 41.350	13 32 35.86	14 47 39.33	14 3760
85	8.0	13.6	15.7	17.6	19.5	21.8	a	34 47.30	306 20 "	"	I 48.920	13 33 58.18	14 41 59.66	14 3767
86	8.7	12.3	14.5	16.7	21.0	22.6	c_3 d_2	37 12.35	304 2 10.0	8.5	V B 50.480	13 36 23.36	17 2 50.05	16 3725
87	8.6	21.1	23.2	25.2	26.9	29.3	a	38 55.07	304 32 10.0	8.7	I 41.780	13 38 6.05	16 32 20.93	16 3732
[illegible]	8.8	8.7	10.9	13.0	15.3	17.2	c	39 13.02	305 36 10.0	8.7	V B 50.340	13 38 23.95	15 28 47.72	15 3728
89	8.7	50.9	53.0	55.1	57.4	59.5	c	39 55.18	304 42 10.0	8.5	V 45.500	13 39 6.15	16 21 9.00	16 3736
90	8.6	2.8	5.1	7.0	8.9	10.7	e	40 37.23	305 38 10.0	8.4	V 44.880	13 39 48.16	15 25 18.18	−15 3734

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B.D.
		s	s	s	s	s		m s	°	'	"	"		r	h m s	° ' "	°
91	8.5	13.3	15.2	17.1	19.3	21.4	a	42 47.37	303	16	10.0	8.0	I	41.280	13 41 58.42	−17 48 34.02	−17 3931
92	9.3	3.6	5.7	8.0	10.1	12.2	c	43 7.92	304	4	10.0	8.2	V C	47.735	13 42 18.94	17 4 54.24	16 3746
93	9.1	14.7	16.8	19.0	21.2	23.3	c	44 19.00	304	4	“	“	III	48.770	13 43 30.02	16 58 7.56	16 3748
94	9.1	14.7	16.9	19.2	21.4	23.5	c	45 19.14	303	44	10.0	8.4	III	41.530	13 44 30.18	17 20 27.22	17 3938
95	8.8	27.4	29.3	31.1	33.1	35.3	a	48 1.05	305	24	10.4	9.1	I	41.260	13 47 12.01	15 40 26.36	15 3755
96	8.6	3.8	5.8	7.7	9.6	11.9	a	48 37.54	305	36	10.0	8.1	III B	45.790	13 47 48.49	15 30 13.58	15 3756
97	9.2	34.7	36.7	38.5	40.4	42.7	a	49 8.37	305	36	“	“	III	45.855	13 48 19.32	15 26 58.22	15 3761
98	......	31.2	33.4	35.4	37.7	39.7	c	49 35.48	306	26	10.0	9.0	V	42.200	13 48 46.39	14 38 5.45	14 3825
99	8.3	27.0	29.0	30.8	32.8	35.0	a	51 0.72	305	26	10.0	8.9	III B	49.085	13 50 11.69	15 39 9.97	15 3770
100	9.0	4.1	6.2	8.4	10.6	12.7	c	51 8.40	305	26	“	“	V A	44.100	13 50 19.36	−15 34 17.19	−15 3771
101	9.2	47.9	50.1	52.3	54.5	56.6	c	51 52.28	305	26	“	“	III C	49.040	13 51 3.26	−15 42 23.57	−15 3774
102	8.9	31.6	33.8	35.9	38.3	40.4	c	52 36.00	304	30	10.0	8.7	III	42.515	13 51 47.03	16 34 4.49	16 3767
103	9.3	29.7	32.0	34.0	36.3	38.3	c	53 34.06	304	30	“	“	III B	42.290	13 52 45.10	16 37 22.66	16 3772
104	9.0	17.3	19.5	21.6	23.8	26.0	c	54 21.64	303	26	10.0	8.5	V	45.410	13 53 32.73	17 37 11.83	17 3970
105	8.7	9.5	11.7	13.7	15.9	18.0	c	56 13.76	305	12	10.0	9.0	III	47.560	13 55 24.76	15 50 24.75	15 3785
106	8.8	25.5	27.3	29.3	31.4	33.6	a	57 59.40	304	10	10.0	8.6	I	47.085	13 57 10.47	16 52 36.61	16 3784
107	7.0	52.4	54.5	56.4	58.3	0.5	a	58 26.40	304	10	“	“	I	45.590	13 57 37.47	16 53 5.22	16 3785
108	7.8	31.7	33.9	36.0	38.1	40.4	c	0 36.02	305	12	10.0	8.0	III	44.410	13 59 47.03	15 51 24.82	15 3805
109	8.8	27.3	29.6	31.8	34.0	36.1	c	1 31.76	304	4	10.0	9.4	III B	44.640	14 0 42.84	17 2 36.89	16 3798
110	8.0	49.0	51.3	53.5	55.7	57.7	c	1 53.44	304	4	“	“	V	46.720	14 1 4.52	−16 58 42.76	−16 3802
111	8.0	31.7	33.9	36.0	38.2	40.4	c	2 36.04	305	20	10.0	8.9	V	46.210	14 1 47.05	−15 42 48.93	−15 3809
112	9.1	38.2	40.4	42.5	44.7	47.0	c	3 42.56	304	58	9.5	8.1	V	43.190	14 2 53.60	16 5 48.35	15 3812
113	9.3	39.1	41.0	43.0	44.8	47.0	a	6 12.60	306	44	10.0	9.1	I	43.060	14 5 23.54	14 19 44.65	14 3891
114	8.7	35.5	37.5	39.9	42.0	44.2	c	7 39.82	302	(48)	10.0	8.9	III	41.080	14 6 51.00	18 16 34.09	18 3769
115	8.7	30.4	32.6	34.7	36.9	39.0	c	8 34.72	305	54	10.0	8.6	V.	44.470	14 7 45.71	15 9 19.60	14 3900
116	8.8	2.0	4.2	6.3	8.2	10.0	e	8 36.51	305	54	“	“	VII	47.610	14 7 47.50	15 8 19.07	14 3901
117	8.6	56.9	59.1	1.0	3.0	4.8	e	9 31.05	304	4	10.0	8.8	VII	43.400	14 8 42.16	16 59 44.87	16 3829
118	9.0	57.0	59.2	1.2	3.6	5.7	c	11 1.34	304	58	10.0	9.3	V	43.740	14 10 12.40	16 5 35.37	15 3836
119	9.1	37.0	39.0	41.4	43.4	45.7	c	12 41.30	303	50	10.0	9.0	III B	42.350	14 11 52.44	17 17 19.36	17 4057
120	8.9	30.5	32.8	34.9	37.0	39.4	c	13 34.92	303	50	“	“	III B	45.630	14 12 46.06	−17 16 16.19	−17 4061
121	9.0	45.7	48.0	50.2	52.3	56.6	$c_2 d_1$	13 47.97	303	50	“	“	V	44.440	14 12 59.10	−17 13 24.86	−17 4062
122	9.1	50.8	53.0	54.9	56.9	58.6	e	14 25.12	305	16	10.0	8.5	VII	44.225	14 13 36.17	15 47 24.55	15 3844
123	9.1	16.9	19.1	21.3	23.6	25.6	c	16 21.30	304	38	10.0	8.8	III	44.145	14 15 32.40	16 25 27.71	16 3845
124	9.1	39.9	42.2	44.4	46.6	48.7	c	16 44.36	304	38	“	“	III C	44.770	14 15 55.47	16 31 42.58	16 3847
125	9.0	20.6	22.7	24.7	26.7	28.5	e	16 54.92	305	16	10.0	8.8	VII	43.260	14 16 5.98	15 47 42.34	15 3858
126	9.1	8.9	11.1	13.2	15.4	17.5	c	19 13.22	306	40	10.0	9.2	III C	42.860	14 18 24.20	14 30 12.69	14 3944
127	8.3	48.4	50.6	52.5	54.7	56.9	c	19 52.62	306	40	“	“	III A	44.020	14 19 3.59	14 20 8.94	14 3948
128	8.3	11.8	13.9	16.1	18.4	20.5	c	21 16.14	305	12	9.7	8.1	III	45.930	14 20 27.22	15 50 51.14	15 3869
129	8.1	11.5	13.4	15.3	17.2	19.5	a	22 45.14	305	42	10.0	9.1	I	42.755	14 21 56.19	15 21 49.54	15 3875
130	9.3	57.8	59.7	1.6	3.4	5.7	a	23 31.44	305	24	10.0	9.2	I	43.190	14 22 42.51	−15 39 41.79	−15 3877
131	9.0	55.1	57.3	59.5	1.8	3.9	c	23 59.52	304	30	10.0	8.5	III A	41.755	14 23 10.65	−16 30 57.95	−16 3873
132	8.9	29.3	31.6	33.6	35.5	37.3	e	24 3.61	304	30	“	“	VII B	40.990	14 23 14.75	16 37 40.94	16 3875
133	8.7	1.7	3.9	5.9	7.9	9.7	e	24 35.96	304	30	“	“	VII C	43.510	14 23 47.11	16 40 4.55	16 3878
134	9.4	1.2	3.3	5.5	7.6	9.9	c	26 5.50	305	12	10.2	9.3	V C	49.260	14 25 16.60	15 56 11.82	15 3882
135	9.4	53.8	55.8	57.9	0.1	2.3	c	26 57.98	305	12	“	“	III A	45.020	14 26 9.07	15 47 51.98	15 3887
136	8.0	11.1	13.2	15.5	17.6	19.8	c	27 15.44	305	12	“	“	V B	42.500	14 26 26.54	15 55 8.74	15 3892
137	8.6	4.0	6.1	8.3	10.4	12.5	c	28 8.26	305	12	“	“	III B	49.715	14 27 19.36	15 52 50.01	15 3893
138	9.3	39.8	41.6	43.5	45.3	47.5	a	30 13.16	306	42	10.5	9.3	I	42.320	14 29 24.16	14 21 52.95	14 3984
139	8.8	46.4	48.5	50.6	52.9	55.0	c	32 50.68	304	56	10.5	9.3	III	48.030	14 32 1.81	16 6 7.78	15 3911
140	8.8	37.3	39.4	41.5	43.8	45.9	c	33 41.58	304	56	“	“	III	46.670	14 32 52.72	−16 6 33.66	−15 3914
141	9.5	51.7	54.0	56.0	58.4	0.5	c	33 56.12	304	56	“	“	V A	42.730	14 33 7.26	−16 4 34.85	−15 3915
142	8.6	22.6	24.5	26.5	28.3	30.6	a	34 56.38	304	56	“	“	III B	47.600	14 34 7.52	16 9 29.55	15 3920
143	8.8	58.1	0.1	2.4	4.6	6.8	c	37 2.40	304	54	10.0	8.8	III	40.765	14 36 13.54	16 10 26.75	15 3930
144	8.7	38.7	40.7	43.0	45.2	47.3	c	37 42.98	304	54	“	“	III	41.390	14 36 54.12	16 10 14.58	15 3935
145	9.5	12.8	14.9	17.2	19.4	21.5	c	38 17.16	304	54	“	“	III B	40.670	14 37 28.31	16 13 42.30	16 3923
146	9.1	25.9	28.0	30.1	32.4	34.5	c	39 30.18	305	46	10.0	9.2	III	42.310	14 38 41.27	15 17 53.73	15 3941
147	9.0	40.0	42.0	44.2	46.3	48.4	c	40 44.18	306	2	10.0	8.6	III B	43.140	14 39 55.25	15 4 51.09	14 4021
148	6.5	11.4	13.6	15.8	18.0	20.0	c	41 15.76	306	2	“	“	III	41.060	14 40 26.83	15 2 16.82	14 4023
149	9.0	14.0	16.1	18.3	20.5	22.7	c	42 18.32	305	0	10.0	8.2	III	44.560	14 41 29.47	16 3 12.55	15 3949
150	9.4	16.4	18.5	20.3	22.3	24.6	a	43 50.36	304	26	10.0	8.1	I	47.310	14 43 1.56	−16 36 21.02	−16 3940
151	9.0	9.3	11.5	13.7	16.0	18.0	c	44 13.70	304	26	“	“	V	50.215	14 43 24.90	−16 35 25.19	−16 3942[1]
152	9.0	39.7	41.9	44.0	45.9	47.7	e	44 14.00	304	26	“	“	VII	50.490	14 43 25.20	16 35 19.64	16 3942[2]
153	......	53.7	55.8	58.0	0.2	2.4	c	45 58.02	305	26	10.0	8.9	V	51.720	14 45 9.15	15 34 52.45	15 3965
154	......	35.2	37.4	39.5	41.5	43.2	e	46 9.66	305	26	“	“	VII B	53.400	14 45 20.79	15 37 34.17	15 3966
155	8.6	52.2	54.4	56.5	58.7	2.8	$c_2 d_1$	47 54.34	305	2	9.5	8.1	V	50.700	14 47 5.51	15 59 13.32	15 3976
156	.....	51.9	54.2	56.3	58.5	0.5	c	48 56.28	305	2	“	“	III C	49.160	14 48 7.46	16 6 9.65	15 3978
157	8.9	41.2	43.3	45.4	47.7	49.7	c	49 45.46	305	2	“	“	V	51.090	14 48 56.63	15 59 5.34	15 3981
158	9.1	26.4	28.6	30.5	32.5	34.3	e	50 0.70	305	2	“	“	VII (C)	45.160	14 49 11.88	16 7 25.25	15 3983
159	9.2	17.0	19.0	21.2	23.4	25.6	c	51 21.24	305	8	10.0	8.9	V B	39.390	14 50 32.42	16 0 2.66	15 3987
160	9.0	9.2	11.4	13.6	15.8	17.7	c	52 13.54	305	8	“	“	V	46.650	14 51 24.71	−15 54 28.92	−15 3989
161	7.9	14.1	16.3	18.4	20.6	22.8	c	53 18.44	304	12	10.0	9.0	III C	44.260	14 52 29.70	−16 57 44.33	−16 3972
162	9.0	28.2	30.8	32.8	35.2	37.1	c	53 32.82	304	12	“	“	V	46.280	14 52 44.07	16 50 38.44	16 3973
163	9.1	59.7	1.8	4.0	6.2	8.3	c	55 4.00	305	40	10.0	9.1	III	43.070	14 54 15.14	−15 23 35.29	−15 4005

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
164	8.8	15.2	17.1	19.0	21.0	23.4	a	56 48.92	305 32 10.0	8.2	I	40.930	14 56 0.08	−15 32 16.58	−15 4008
165	8.9	22.1	24.4	26.2	28.0	30.4	a	57 55.85	306 40 10.6	9.7	I B	50.520	14 57 6.92	14 24 21.93	14 4095
166	9.4	14.7	16.8	18.7	20.5	22.9	a	1 48.56	305 10 10.7	9.6	I (B)	41.650	15 0 59.77	15 57 15.28	15 4025
167	6.5	47.4	49.5	51.5	53.8	55.9	c	1 51.62	305 10 "	"	V	47.550	15 1 2.82	15 52 8.14	15 4026
168	8.9	22.5	24.5	26.8	29.0	31.1	c	3 26.78	304 22 10.0	9.3	III B	50.530	15 2 38.06	16 42 27.58	16 4012
169	8.9	34.0	36.0	37.8	39.7	42.0	a	5 7.66	305 44 10.5	9.5	I	43.230	15 4 18.83	15 19 28.60	15 4038
170	9.2	41.2	43.5	45.5	47.7	49.9	c	9 45.56	305 0 10.0	8.8	III	45.260	15 8 56.80	−16 2 51.14	−15 4060
171	9.2	41.2	43.2	45.4	47.6	49.8	c	10 45.44	304 30 10.0	9.0	III	42.360	15 9 56.73	−16 33 47.93	−16 4039
172	8.8	19.6	21.8	23.7	25.4	27.8	a	15 53.52	305 0 9.6	7.5	I	41.940	15 15 4.79	16 3 53.75	15 4082
173	8.7	11.2	13.4	15.5	17.8	19.9	c	16 15.56	305 26 10.0	8.5	III	46.810	15 15 26.79	15 36 18.30	15 4085
174	8.9	46.4	48.5	50.7	52.9	55.0	c	17 50.70	305 18 10.0	8.4	III A	45.430	15 17 1.94	15 41 30.37	15 4089
175	9.1	42.4	44.4	46.5	48.7	51.0	c	18 46.60	305 18 "	"	III B	40.860	15 17 57.85	15 49 26.23	15 4096
176	9.0	25.5	27.6	29.7	31.9	34.1	c	19 29.76	305 18 "	"	III	46.270	15 18 41.01	15 44 28.14	15 4098
177	9.1	27.5	29.7	31.4	33.4	35.7	a	22 1.41	304 58 10.0	8.5	I	43.920	15 21 12.70	16 5 13.31	15 4105
178	8.7	14.4	16.4	18.3	20.2	22.5	a	22 48.23	304 58 "	"	I B	44.015	15 21 59.52	16 8 25.16	15 4112
179	8.6	12.7	14.8	16.9	19.0	21.3	c	26 16.94	305 38 10.0	8.7	III B	38.345	15 25 28.19	15 30 11.07	15 4132
180	9.1	28.1	30.4	32.6	34.8	39.0	$c_2 d_1$	26 30.41	305 38 "	"	V	43.075	15 25 41.65	−15 25 26.10	−15 4133
181	9.0	46.5	48.8	50.9	53.1	55.3	c	27 50.92	305 46 10.0	8.6	III	46.145	15 27 2.15	−15 16 26.43	−15 4136

Reduction Elements. Zone 114.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
May 18.3....	−0.010	−0.033	−0.128	+0.012	−0.006	−0.247
18.5....	+0.035	+0.020	−0.366			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ζ Crateris		η Crateris		ε Corvi		Piazzi VII. 54		γ Scorpii		β Librae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	303 16 9.50		304 28 9.55		299 0 8.90		308 4 9.35		296 10 9.40		312 2 9.35	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.525	5 26.77	44.470	5 25.88	44.930	5 34.33	40.810	4 15.25	45.710	5 49.42	44.345	5 22.92
II Red. to Mer......	.530	0.18	.490	0.16	.935	0.22	.780	0.13	.715	0.25	.325	0.09
VI Inclination	.515		.480		.910		.800		.705		.325	
VII Refraction.......	.530	1 27.4	.475	1 23.6	.900	1 43.4	.790	1 13.5	.695	1 57.5	.300	1 4.3

	32 Librae		37 Librae	
	° ′ ″		° ′ ″	
CIRCLE READING.	304 42 9.50		311 20 9.25	
	r	′ ″	r	′ ″
I Microm. Eq.	41.265	4 24.46	42.750	4 52.65
II Red. to Mer......	.295	0.16	.750	0.10
VI Inclination	.275		.755	
VII Refraction.......	.270	1 23.7	.730	1 6.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ζ Crateris...........	11 40 30.92	11	−0.21	−62.63	303 20 9.0	27.4
η Crateris...........	11 51 44.46	11	0.20	−62.68	304 32 12.0	27.8
ε Corvi.............	12 5 48.05	11	−0.22	−62.60	299 4 0.0	27.9
4 H. Draconis.	12 8 26.49	8	+0.80	[−63.10]	39 16	....
Piazzi XII. 54	12 16 35.15	11	0.19	−62.64	308 7 11.2	27.6
γ Scorpii	14 59 0.94	11	0.23	−62.61	296 14 1.6	29.1
48 H. Cephei s. p.....	15 7 59.26	8	−1.05	[−63.07]	63 42	....
β Librae............	15 12 26.86	11	0.18	−62.71	312 6 28.1	28.4
32 Librae...........	15 23 25.59	11	0.20	−62.67	304 45 10.4	28.4
37 Librae.....	15 29 31.84	11	0.18	−62.70	311 23 56.0	29.0

h 11.980...........*dt*...................... s −62.638

Hourly rate............ − 0.0103

Adopted Equator Point .... 321° 6′ 28″.20

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
11 41	29.864	56.1	53.4
12 40	29.875	54.0	52.1
13 34	29.880	52.9	50.4
14 30	29.872	51.5	49.2
15 31	29.866	50.7	48.2

Notes.

95. Fainter close companion, n. p
98. Close double.
113. Fainter companion, n. p.
156. Very close double.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					D = Z. D. N. to 1895.0				
			303°	304°	305°	306°	307°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	″	″	″	″	″
303	−0.208	11 30	......	......	+13.468	+13.474	+13.479	.....	.....	+16.57	+16.27	+15.98
304	0.205	12 0	+13.553	+13.545	13.536	13.529	13.521	+18.00	+17.73	17.46	17.19	16.92
305	0.202	12 30	13.659	13.637	13.615	13.594	13.571	18.63	18.39	18.14	17.90	17.66
306	0.199	13 0	13.774	13.736	13.702	13.666	13.630	19.00	18.79	18.57	18.36	18.14
307	−0.195	13 30	13.890	13.842	13.792	13.743	13.694	19.14	18.95	18.77	18.58	18.40
		14 0	14.012	13.950	13.889	13.827	13.767	19.00	18.86	18.71	18.56	18.41
		14 30	+14.135	14.060	13.988	13.916	13.843	+18.61	18.50	18.39	18.28	18.17
		15 0	......	14.171	14.088	14.005	+13.922	.....	17.91	17.84	17.78	+17.71
		15 30	......	+14.280	+14.187	+14.095	......	.....	+17.08	+17.05	+17.03	.....

APPARENT RIGHT ASCENSION.	R				
	303°	304°	305°	306°	307°
h m	″	″	″	″	″
11 30	88.49	85.23	82.11	79.16	76.33
12 0	88.65	85.39	82.26	79.30	76.47
12 30	88.80	85.53	82.40	79.43	76.60
13 0	88.96	85.68	82.55	79.58	76.74
13 30	89.12	85.84	82.70	79.73	76.88
14 0	89.25	85.96	82.81	79.84	76.98
14 30	89.35	86.06	82.91	79.93	77.07
15 0	89.43	86.14	82.98	80.00	77.14
15 30	89.52	86.22	83.06	80.08	77.22

1895 MAY 22. ZONE 115. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.9	5.3	7.4	9.5	11.8	14.0	c	24 9.60	304 24 10.0 12.4	III B	38.430	12 23 17.80	−16 44 48.12	−16 3471
2	9.1	29.7	31.9	34.2	36.4	38.6	c	24 34.16	304 24 " "	III	38.030	12 23 42.36	16 41 41.71	16 3473
3	9.3	22.1	24.5	26.7	29.0	31.1	c	25 26.68	304 24 " "	III A	45.080	12 24 34.88	16 36 11.97	16 3475
4	8.6	42.4	44.4	46.2	48.2	50.5	a	29 16.38	303 52 10.0 12.0	I B	45.810	12 28 24.60	17 14 27.65	16 3492
5	8.8	21.5	23.7	25.8	28.0	30.2	c	29 25.84	303 52 " "	III	49.080	12 28 34.06	17 10 11.05	16 3493
6	8.0	44.3	46.5	48.3	50.1	52.4	a	31 18.26	304 28 10.0 12.5	I	43.610	12 30 26.48	16 35 53.82	16 3498
7	8.2	56.5	58.6	0.5	2.4	4.5	a	32 30.21	306 0 10.0 11.6	I A	41.285	12 31 38.39	15 1 20.14	14 3543
8	8.7	29.9	32.1	34.2	36.4	38.6	c	32 34.24	306 0 " "	V C	43.650	12 31 42.43	15 10 15.88	14 3544
9	9.0	15.8	17.9	19.8	21.6	23.9	a	33 49.51	306 0 " "	I A	44.000	12 32 57.69	15 0 27.95	14 3549
10	......	20.9	23.1	25.0	26.9	29.2	a	34 55.11	303 34 10.0 11.0	I	43.610	12 34 3.36	−17 29 56.84	−17 3672
11	9.2	6.0	8.2	10.2	12.5	14.6	c	35 10.30	304 34 10.0 11.2	III (B)	40.385	12 34 18.53	−16 34 9.96	−16 3512
12	9.0	36.4	38.4	40.0	42.0	44.4	a	36 10.17	304 34 " "	III B	50.275	12 35 18.40	16 31 0.07	16 3517
13	8.9	41.0	43.2	45.2	47.0	49.0	e	36 15.10	303 36 10.0 11.4	VII	43.195	12 35 23.35	17 28 4.25	17 3682
14	8.9	41.8	44.1	46.2	48.3	50.5	c	40 46.18	306 44 10.0 11.8	III B	50.285	12 39 54.37	14 20 53.38	14 3568
15	8.9	58.5	0.6	2.8	7.0	8.6	c_3 d_2	44 58.50	306 46 10.0 13.1	V	43.815	12 44 6.70	14 17 42.30	14 3585
16	8.6	4.6	6.9	8.6	10.6	12.9	a	46 38.69	304 16 10.0 13.0	III	45.170	12 45 46.95	16 47 23.03	16 3546
17	8.6	0.0	2.0	4.1	6.4	8.5	c	47 4.20	306 16 10.0 12.4	III	44.160	12 46 12.42	14 47 37.19	14 3592
18	9.0	47.3	49.5	51.5	53.5	55.4	e	47 21.80	305 54 10.0 12.5	VII	46.505	12 46 30.01	15 8 52.73	14 3594
19	9.0	45.9	48.1	50.1	52.1	53.7	e	48 20.48	306 54 10.0 13.3	V	45.980	12 47 28.68	14 8 59.99	13 3611
20	7.0	55.9	57.9	59.6	1.7	3.9	a	51 29.48	306 16 10.0 11.6	I	45.760	12 50 37.70	−14 47 6.33	−14 3605
21	8.0	58.5	0.6	2.8	5.0	7.1	c	52 2.80	306 36 10.0 12.5	III A	43.995	12 51 11.00	−14 24 24.55	−14 3608
22	8.9	20.5	22.6	24.7	27.0	29.2	c	52 24.80	306 36 " "	V C	44.115	12 51 33.02	14 34 3.17	14 3613
23	8.0	36.6	38.6	40.7	42.9	45.0	c	53 40.76	306 36 " "	III	47.070	12 52 48.98	14 26 39.74	14 3615
24	9.1	49.3	51.5	53.5	55.8	58.0	c	55 53.62	306 22 10.0 12.0	III B	50.905	12 55 1.84	14 42 40.80	14 3619
25	9.5	25.2	27.3	29.5	31.6	33.9	c	56 29.50	305 48 10.0 12.0	V	45.740	12 55 37.74	15 15 7.23	15 3577
26	8.4	17.9	20.2	22.0	24.1	25.9	e	56 52.37	305 48 " "	VII	45.150	12 56 0.61	15 15 18.25	15 3578
27	9.3	26.9	28.8	31.1	33.3	35.5	c	58 31.12	306 14 10.0 12.3	V	44.820	12 57 39.36	14 49 23.36	14 3626
28	8.4	31.6	33.6	35.7	38.0	40.2	c	59 35.82	303 58 10.0 11.3	III	46.340	12 58 44.13	17 5 0.95	16 3591
29	8.8	31.2	33.4	35.4	37.8	39.9	c	0 35.54	303 58 " "	III B	46.070	12 59 43.85	17 8 20.06	16 3596
30	8.5	18.1	20.3	22.3	24.4	26.6	c	10 22.34	306 34 10.0 11.6	III	44.840	13 9 30.58	−14 29 21.02	−14 3671

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	c
31	9.0	1.2	2.7	6.9	9.2	11.4	b_2 c_3	11 11.28	306 34 10.0 11.6	III A 41.310	13 10 19.52	−14 27 14.28	−14 3674
32	9.0	15.4	17.6	19.5	21.5	23.4	e	14 49.86	306 6 10.0 12.3	VII B 39.115	13 13 58.13	15 2 25.05	14 3690
33	9.1	3.2	5.2	7.3	9.2	11.0	e	15 37.58	306 6 " "	VII A 40.620	13 14 45.86	14 55 27.65	14 3694
34	9.4	31.9	34.2	36.5	40.7	42.1	c_3 d_2	18 32.06	305 50 10.0 12.0	V 45.160	13 17 40.36	15 13 15.40	14 3707
35	8.2	38.5	40.6	42.7	44.5	46.3	e	19 12.96	306 28 10.0 11.9	VII 43.890	13 18 21.24	14 35 37.79	14 3713
36	8.8	11.6	13.7	15.7	17.5	19.3	e	19 45.99	306 28 " "	VII C 48.595	13 18 54.28	14 40 33.76	14 3714
37	9.2	5.9	8.2	10.2	12.1	13.9	e	20 40.35	305 28 10.0 11.8	VII B 41.590	13 19 48.67	15 39 38.66	15 3660
38	9.5	7.1	9.2	11.1	13.3	15.6	c	22 11.26	305 28 " "	III 45.760	13 21 19.58	15 35 4.50	15 3666
39	5.5	24.4	26.6	28.6	30.5	32.4	e	22 58.82	305 36 10.0 12.4	V 44.950	13 22 7.14	15 27 19.19	15 3668
40	8.9	18.3	20.4	22.5	24.7	26.7	c	25 22.52	306 30 10.0 12.5	III 41.950	13 24 30.82	−14 34 13.98	−14 3727
41	9.4	32.6	34.5	36.5	38.4	40.7	a	27 6.31	305 36 10.0 11.9	I 44.110	13 26 14.64	−15 27 34.87	−15 3683
42	8.6	11.8	14.0	16.1	20.4	22.0	c_3 d_2	27 11.85	306 18 10.0 13.1	V 43.495	13 26 20.16	14 45 44.19	14 3733
43	6.0	18.5	20.6	22.8	24.9	27.1	c	28 22.78	306 18 " "	III C 47.410	13 27 31.08	14 50 55.88	14 3739
44	9.5	21.9	24.0	26.1	30.3	31.9	c_3 d_2	29 21.82	305 50 10.0 12.0	V A 47.145	13 28 30.14	15 9 21.30	14 3743
45	9.5	9.3	11.6	13.6	15.5	17.2	e	31 43.95	306 58 10.0 12.5	VII B(50).330	13 30 52.24	14 6 44.83	13 3731
46	8.8	21.9	24.0	26.0	27.8	29.7	e	32 56.25	305 58 10.0 11.0	VII 45.775	13 32 4.58	15 5 1.16	14 3756
47	8.0	59.8	1.8	4.0	6.2	8.4	c	35 4.04	305 58 " "	III 41.330	13 34 12.37	15 6 26.43	14 3768
48	8.8	36.0	38.0	40.2	42.6	44.7	c	35 40.30	304 6 10.0 11.3	V 41.070	13 34 48.73	16 58 36.39	16 3717
49	8.8	41.9	44.0	46.1	47.9	49.9	e	36 16.29	305 38 10.0 11.3	VII 47.550	13 35 24.64	15 24 27.25	15 3718
50	8.8	56.5	58.6	0.5	2.5	4.4	e	37 30.83	305 38 " "	V 45.060	13 36 39.18	−15 25 15.09	−15 3723
51	9.4	26.5	28.8	31.0	33.0	35.2	c	39 30.90	306 46 10.0 11.8	V C 41.960	13 38 39.22	−14 24 37.60	−14 3786
52	7.8	16.9	19.2	21.0	23.0	24.9	e	39 51.49	306 46 " "	V A 40.450	13 38 59.80	14 15 25.57	14 3787
53	8.5	38.3	40.5	42.6	46.7	48.4	c_3 d_2	40 38.30	306 46 " "	V A 39.060	13 39 46.61	14 15 52.11	14 3792
54	8.7	8.9	10.9	12.7	14.6	17.0	a	42 42.76	304 30 10.0 12.0	I 41.110	13 41 51.19	16 34 32.77	16 3744
55	8.5	21.8	23.9	26.2	28.4	30.5	c	43 26.16	305 30 10.0 13.1	III 42.810	13 42 34.54	15 33 56.73	15 3739
56	9.0	38.8	40.8	42.7	44.6	46.8	a	47 12.44	306 6 10.0 12.0	I 41.100	13 46 20.80	14 58 26.67	14 3815
57	9.0	41.7	43.8	45.8	48.1	50.2	c	47 45.92	306 24 10.0 12.5	III 43.130	13 46 54.26	14 39 47.66	14 3820
58	9.3	56.2	58.3	0.3	2.2	4.5	a	49 30.16	305 2 10.0 11.0	I B 41.510	13 48 38.58	16 5 36.71	15 3764
59	9.0	26.3	28.5	30.7	32.9	35.0	c	50 30.68	305 2 " "	III 42.110	13 49 39.10	16 2 11.20	15 3768
60	9.0	5.3	7.6	9.6	11.8	13.8	c	53 9.62	305 38 10.0 11.1	III 46.925	13 52 18.02	−15 24 36.54	−15 3777
61	8.8	8.3	10.6	12.6	14.7	16.9	c	54 12.62	305 38 " "	III 45.590	13 53 21.02	−15 25 1.95	−15 3781
62	8.7	59.9	1.9	3.7	5.7	8.0	a	59 33.54	306 4 10.0 10.9	I 41.530	13 58 41.93	15 0 17.58	14 3861
63	9.1	37.9	39.9	42.1	44.1	46.3	c	59 42.06	305 30 10.0 11.4	III 43.380	13 58 50.48	15 33 43.45	15 3795
64	8.5	30.0	32.0	34.0	36.3	38.6	c	0 34.18	305 30 " "	III 46.620	13 59 42.60	15 32 41.08	15 3804
65	9.4	22.2	24.3	26.0	27.8	30.2	a	1 55.81	306 0 10.0 11.3	I 49.080	14 1 4.21	15 1 52.17	14 3872
66	9.6	5.3	7.5	9.5	13.9	15.6	c_3 d_2	2 5.34	306 0 " "	VI 45.470	14 1 13.74	15 3 1.51	14 3874
67	9.2	13.3	15.6	17.7	19.9	22.0	c	6 17.70	306 18 10.0 11.3	III 50.730	14 5 26.10	14 43 18.82	14 3892
68	8.8	34.6	36.8	38.9	41.0	43.3	c	6 38.92	306 18 " "	V 47.540	14 5 47.32	14 44 19.88	14 3893
69	9.6	18.6	20.9	23.2	25.5	27.4	c	7 23.12	306 18 " "	V B 44.135	14 6 31.52	14 48 39.22	14 3896
70	9.4	59.0	1.1	3.3	5.3	7.1	e	7 33.57	306 18 " "	VII C 44.230	[14 6 41.98]	−14 51 49.34	−14 3897

Reduction Elements. Zone 115.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
May 22.3....	−0.007	−0.006	−0.122	+0.008	−0.011	−0.120
22.4....	+0.024	+0.028	−0.119			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ε Corvi		γ Corvi		Piazzi XII. 54		Mayer 522		ι Virginis		2 Librae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	299 0 11.00		304 4 11.05		308 2 10.70		315 18 11.50		315 32 10.70		309 48 11.20	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.910	5 33.54	45.920	5 53.92	47.145	6 16.44	44.255	5 21.96		4 59.96	43.430	5 5.56
II Red. to Mer......	.900	0.22	.975	0.17	.110	0.13	.280	0.06	43.120	0.04	.420	0.11
VI Inclination	.850		.955		.110		.285		.145	0.04	.435	
VII Refraction.......	.850	1 43.3	.915	1 24.8	.095	1 13.4	.275	57.0	.115	56.7	.390	1 9.3

	Mayer 575		α Librae	
	° ′ ″		° ′ ″	
CIRCLE READING.	301 4 10.70		305 26 10.60	
	r	′ ″	r	′ ″
I Microm. Eq......	42.740	4 53.08	43.265	5 2.25
II Red. to Mer......	.795	0.20	.260	0.15
VI Inclination	.770		.255	
VII Refraction.......	.765	1 35.7	.205	1 21.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Corvi	12 5 50.67	11	−0.11	−65.36	299 4 1.5	29.5
4 H. Draconis	12 8 28.84	11	+0.37	[−65.35]	39 16	....
γ Corvi	12 11 31.59	11	−0.10	−65.34	304 8 40.3	30.0
Piazzi XII. 54	12 16 37.71	11	−0.10	−65.33	308 7 13.9	30 2
Mayer 522	12 43 15.39	11	−0.08	−65.43	315 22 36.5	29.4
α Ursae Minoris S. P.	13 20 41.00	2	−4.40	[−65.38]	52 18	....
ι Virginis	14 11 38.43	11	−0.08	−65.45	315 36 14.0	28.8
2 Librae	14 18 54.49	11	−0.09	−65.34	309 52 7.6	28.9
Mayer 575	14 30 4.12	11	−0.11	−65.31	301 7 28.3	29.7
α Librae	14 46 12.10	11	−0.10	−65.27	305 29 51.9	29.2

h 12.322 . . . . *dt* . . . . s −65.365

Hourly rate . . . . + 0.0108

Adopted Equator Point . . . . 321° 6′ 29.″46

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
12 0	30.035	73.0	55.4
13 0	29.974	54.2	53.2
13 55	29.980	53.0	52.2
14 40	29.978	52.6	52.1

Notes.

13. Images very bad.
25. Difficult.

T, t, and B 12h computed from Meteorological Journal.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. N. to 1895.0				
			303°	304°	305°	306°	307°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	″	″	″	″	″
303	−0.092	12 0	+13.598	+13.589	+13.582	......	......	+17.94	+17.66	+17.38	.....	.....
304	0.090	12 30	13.698	13.676	13.653	+13.631	+13.609	18.58	18.33	18.07	+17.81	+17.54
305	0.088	13 0	+13.803	13.765	13.730	13.694	13.660	+18.98	18.75	18.51	18.28	18.05
306	0.086	13 30	......	13.863	13.812	13.763	13.716	.....	18.90	18.70	18.50	18.29
307	−0.084	14 0	......	+13.961	13.899	13.837	13.776	.....	+18.80	18.64	18.47	18.29
		14 30	......	......	+13.987	+13.914	+13.842	.....	.....	+18.32	+18.19	+18.04

APPARENT RIGHT ASCENSION.	*R*				
	303° 30′	304°	305°	306°	307°
h m	″	″	″	″	″
12 0	86.94	85.33	82.21	79.25	76.42
12 30	87.10	85.49	82.36	79.40	76.56
13 0	87.28	85.66	82.53	79.56	76.72
13 30	87.38	85.76	82.62	79.65	76.81
14 0	87.46	85.84	82.70	79.73	76.88
14 30	87.48	85.86	82.73	79.74	76.90

1895 MAY 27. ZONE 116. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	9.8	15.5	17.5	20.0	22.1	24.2	c	42 19.86	304	50	10.0	9.4	V	(44).240	12 42 32.38	−16 13 19.32	−15 3534
2	8.9	12.4	14.3	16.1	18.0	20.3	a	43 46.02	305	24	10.0	8.5	I	(45).405	12 43 58.53	15 38 55.70	15 3540
3	7.8	13.8	16.0	18.3	20.3	22.6	c	44 18.20	305	42	10.0	8.9	III	48.620	12 44 30.70	15 20 13.07	15 3543
4	9.5	48.2	50.1	52.0	53.8	56.3	c	44 52.08	305	42	"	"	III C	46.740	12 45 4.59	15 27 16.03	15 3545
5	9.1	35.7	37.9	42.2	43.8	46.5	c_4 d_3	45 33.55	303	48	10.0	8.2	VI B	44.405	12 45 46.10	17 18 53.50	17 3718
6	9.0	35.6	37.8	40.0	42.4	44.3	c	46 40.02	303	48	"	"	V	44.590	12 46 52.58	17 15 35.73	17 3721
7	8.5	39.3	41.5	43.5	45.7	48.0	c	47 43.60	304	24	9.7	8.1	III	45.315	12 47 56.16	16 39 20.27	16 3557
8	9.1	12.2	14.4	16.5	18.8	20.9	c	48 16.56	304	24	"	"	III	45.700	12 48 29.12	16 39 12.83	16 3560
9	9.0	12.7	14.9	17.1	19.3	21.5	c	49 17.10	303	20	10.0	8.8	III C	49.040	12 49 29.69	17 48 38.21	17 3730
10	9.0	8.6	10.7	12.6	14.5	16.8	a	50 42.76	303	20	"	"	I	49.205	12 50 55.35	−17 42 7.78	−17 3737
11	8.9	5.2	7.4	9.4	11.6	13.8	c	51 9.48	304	56	10.0	9.0	III B	43.645	12 51 22.03	−16 11 3.91	−15 3558
12	9.0	0.5	2.6	4.4	6.3	8.5	a	52 34.33	304	56	"	"	I	48.010	12 52 46.88	16 6 25.82	15 3562
13	8.9	36.8	39.0	41.0	43.4	45.5	c	52 41.14	304	56	"	"	III (C)	45.060	12 52 53.70	16 13 49.49	15 3563
14	8.6	52.9	54.9	57.2	59.4	1.5	c	53 57.18	305	4	10.0	8.9	III	44.220	12 54 9.73	15 59 38.22	15 3568
15	8.5	47.5	49.5	51.8	53.9	56.0	c	55 51.74	303	44	10.0	8.8	III	41.420	12 56 4.34	17 20 35.59	17 3752
16	9.4	13.9	16.2	18.4	20.6	22.8	c	56 18.38	303	44	"	"	III	41.200	12 56 30.98	17 20 39.75	17 3753
17	8.9	18.3	20.3	22.2	24.0	26.5	a	57 52.35	303	30	10.0	9.1	I	45.680	12 58 4.97	17 33 14.03	17 3760
18	9.0	58.3	0.6	2.6	4.8	6.9	c	58 2.64	304	20	10.0	9.1	III	44.810	12 58 15.24	16 43 28.37	16 3589
19	8.6	44.5	46.6	48.8	51.0	53.0	c	58 48.78	304	20	"	"	III	49.170	12 59 1.38	16 42 4.58	16 3592
20	8.2	40.2	42.1	44.2	46.0	48.3	a	0 14.28	303	20	10.0	8.4	I	45.070	13 0 26.91	−17 43 26.28	−17 3768
21	9.3	20.3	22.4	24.6	26.9	29.1	c	0 24.66	303	6	9.6	7.9	III	46.270	13 0 37.30	−17 57 4.53	−17 3769
22	9.2	39.3	41.6	43.7	46.0	48.1	c	0 43.74	303	6	"	"	V B	47.470	13 0 56.38	17 59 55.54	17 3771
23	9.2	47.8	50.2	52.3	54.4	56.5	c	1 52.24	304	32	10.0	9.2	III	40.985	13 2 4.84	16 32 40.72	16 3602
24	9.3	53.6	55.7	57.8	0.1	2.2	c	2 57.88	304	10	10.0	8.5	III	42.110	13 3 10.49	16 54 20.42	16 3604
25	8.8	28.6	30.9	33.0	35.3	37.4	c	3 33.04	303	56	10.0	8.0	III	41.440	13 3 45.66	−17 8 36.09	−16 3605

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″	′	r	h m s	° ′ ″	°
26	9.0	31.5	33.6	35.8	38.0	40.2	c	4 35.82	302 46 10.0	8.8	III B	41.040	13 4 48.49	−18 21 58.83	−18 3547
27	9.1	1.7	3.8	5.8	7.6	9.8	a	5 35.96	302 46 “	“	I A	38.760	13 5 48.64	18 16 13.76	18 3553
28	8.9	47.5	49.7	51.2	53.4	55.7	a	6 21.35	305 4 10.0	8.7	I	46.285	13 6 33.95	15 58 57.07	15 3611
29	8.5	19.1	21.1	23.0	24.9	27.2	a	7 53.28	302 46 10.0	8.2	I	44.140	13 8 5.97	18 17 45.03	18 3562[1]
30	8.7	49.1	51.4	53.6	55.6	57.8	c	7 53.50	302 46 “	“	III	44.430	13 8 6.19	−18 17 39.59	−18 3562[2]
31	9.1	0.5	2.6	4.7	6.9	9.1	c	9 4.76	303 50 10.0	8.8	III	45.310	13 9 17.41	−17 13 18.97	−16 3624
32	9.8	39.7	41.8	43.9	46.2	48.5	c	10 44.02	304 54 10.0	9.2	III	47.990	13 10 56.64	16 8 24.07	15 3629
33	......	3.7	5.7	7.9	10.2	14.5	c_2 d_1	11 5.82	304 54 “	“	V C	50.040	13 11 18.44	16 14 11.26	15 3633
34	7.8	56.0	58.2	0.2	2.5	4.5	c	12 0.28	306 2 10.0	9.2	III	45.520	13 12 12.85	15 1 8.24	14 3683
35	9.1	46.6	48.6	50.4	52.4	54.7	a	14 20.76	302 46 10.0	8.5	I	47.480	13 14 33.47	18 16 39.88	18 3581
36	8.9	43.4	45.6	47.7	50.0	52.1	c	14 47.76	303 26 10.0	9.3	III	40.710	13 15 0.44	17 38 47.42	17 3823
37	8.0	37.2	39.2	41.2	43.0	45.5	a	16 11.43	302 50 10.0	8.5	I	46.145	13 16 24.15	18 13 5.03	17 3829
38	9.3	25.3	27.5	29.6	32.1	34.1	c	16 29.72	303 36 10.3	9.5	III A	44.480	13 16 42.40	17 24 19.69	17 3831
39	9.3	35.8	38.0	40.1	42.0	43.8	e	17 9.95	303 36 “	“	VII C	49.025	13 17 22.64	17 32 32.81	17 3834
40	8.7	5.7	7.9	10.0	12.3	14.6	c	17 10.10	303 36 “	“	III B	45.750	13 17 22.79	−17 30 23.66	−17 3833
41	9.3	41.1	43.2	45.3	47.7	49.8	c	18 45.42	303 12 10.0	8.6	III	42.800	13 18 58.13	−17 52 7.82	−17 3843
42	9.0	27.9	30.0	31.9	33.8	36.1	a	20 2.12	303 0 10.0	8.6	I	43.440	13 20 14.84	18 3 55.83	17 3844
43	7.7	27.5	29.6	31.8	34.0	36.2	c	20 31.82	304 44 10.0	8.5	III	41.790	13 20 44.48	16 20 22.46	16 3658
44	9.2	26.1	28.2	30.4	32.7	34.6	c	21 30.40	302 54 10.0	8.7	III	42.470	13 21 43.13	18 10 14.62	17 3849
45	9.3	20.0	22.2	24.3	26.4	28.6	c	22 24.30	303 20 10.4	9.4	III B	43.700	13 22 37.02	17 47 3.03	17 3853
46	9.3	8.4	10.6	12.8	14.9	17.2	c	23 12.78	303 20 “	“	III A	40.720	13 23 25.50	17 41 31.64	17 3857
47	7.	21.9	24.2	26.4	28.6	30.7	c	26 26.36	302 52 10.0	8.5	III B	50.770	13 26 39.12	18 12 48.80	17 3877
48	......	5.8	8.0	10.0	12.3	14.5	c	27 10.12	303 50 10.0	9.5	III B	51.320	13 27 22.84	17 14 34.67	17 3881
49	9.0	2.3	4.4	6.4	8.1	10.4	a	28 36.26	304 30 10.0	9.2	I	44.110	13 28 48.96	16 33 36.87	16 3696
50	9.6	2.5	4.5	6.8	8.9	10.9	c	29 6.72	305 44 10.2	9.9	III	43.950	13 29 19.36	−15 19 35.08	−15 3697
51	9.3	42.7	44.9	47.1	49.2	51.5	c	29 47.08	305 2 10.0	8.7	III	45.590	13 29 59.75	−16 1 7.10	−15 3700
52	9.3	29.5	31.6	33.8	36.0	38.0	c	30 33.78	306 20 10.0	8.9	V	41.495	13 30 46.40	14 44 21.90	14 3752
53	9.3	......	54.8	56.8	58.7	0.6	e	31 26.86	304 30 10.0	8.4	VI	46.780	13 31 39.56	16 32 45.45	16 3707
54	9.1	21.9	24.1	26.2	28.6	30.7	c	32 26.30	(304)52 10.2	9.5	V	42.125	13 32 38.99	16 12 13.04	15 3708
55	8.3	51.4	53.5	55.7	57.9	0.2	c	34 55.74	304 18 10.0	9.2	III B	39.890	13 35 8.48	16 50 11.50	16 3718
56	8.8	58.6	0.8	2.8	5.3	7.4	c	36 2.98	304 18 “	“	III B	43.100	13 36 15.72	16 49 9.71	16 3723
57	8.8	53.0	55.1	57.2	59.5	1.6	c	36 57.28	304 18 “	“	III	42.760	13 37 10.02	16 46 2.02	16 3729
58	9.4	44.3	46.4	48.6	50.8	53.0	c	38 48.62	304 18 “	“	III A	44.230	13 39 1.35	16 42 19.09	16 3735
59	9.0	19.1	21.2	23.3	25.5	27.7	c	41 23.36	303 42 10.0	9.1	III A	40.780	13 41 36.13	17 19 26.66	17 3930
60	6.5	41.5	43.9	46.0	48.3	50.4	c	41 46.02	303 42 “	“	III	44.320	13 41 58.80	−17 21 33.03	−17 3932
61	9.5	43.3	45.5	47.6	49.8	52.0	c	43 47.64	304 54 10.0	9.0	III	45.730	13 44 0.37	−16 9 2.14	−15 3742
62	8.8	49.1	51.3	53.5	55.6	57.9	c	45 53.48	303 12 10.0	8.7	III	43.880	13 46 6.31	17 51 42.44	17 3944
63	8.2	54.0	56.0	58.1	0.5	2.6	c	46 58.24	302 50 10.0	9.7	III	46.370	13 47 11.09	18 12 55.09	17 3949
64	9.6	6.2	8.5	10.8	13.0	17.3	c_2 d_1	47 8.56	302 50 “	“	V A	42.870	13 47 21.41	18 10 47.84	17 3950
65	8.0	37.9	40.1	42.4	44.6	46.7	c	48 42.34	304 22 10.0	9.4	III	45.060	13 48 55.12	16 41 15.39	16 3760
66	9.3	7.8	9.8	12.0	14.4	16.5	c	50 12.10	304 46 10.0	9.5	III	40.900	13 50 24.86	16 18 33.76	16 3763
67	9.2	3.5	5.6	7.8	10.0	12.2	c	52 7.82	304 14 10.0	8.9	III	39.600	13 52 20.62	16 51 0.16	16 3771
68	8.9	47.7	49.9	52.0	54.4	56.4	c	53 52.08	303 42 10.0	8.6	III	45.390	13 54 4.91	17 21 10.42	17 3972
69	9.5	9.9	12.0	14.2	16.4	18.4	c	55 14.18	303 26 10.0	9.5	III	44.030	13 55 27.03	17 37 36.58	17 3979
70	8.8	5.9	7.8	10.1	12.2	14.5	c	56 10.10	303 40 10.2	9.7	III	40.960	13 56 22.94	−17 24 34.45	−17 3982
71	9.1	26.6	28.8	31.0	33.2	35.4	c	57 31.00	302 50 10.0	8.9	III	46.350	13 57 43.90	−18 12 53.79	−18 3732
72	9.3	19.0	21.3	23.1	25.0	27.5	a	58 53.13	304 30 10.0	9.4	I C	48.740	13 59 5.94	16 38 29.46	16 3791
73	9.0	51.5	53.7	55.9	58.2	0.4	c	58 55.94	304 30 “	“	III	48.775	13 59 8.74	16 32 1.66	16 3792
74	9.1	56.2	58.4	0.7	2.9	5.0	c	0 0.64	303 14 10.0	9.0	III	42.400	14 0 13.52	17 50 7.77	17 4005
75	9.0	46.0	48.1	50.3	52.5	54.7	c	1 50.32	303 32 10.0	9.5	III	46.200	14 2 3.18	17 30 53.30	17 4010
76	8.8	4.1	6.3	8.4	10.6	12.9	c	3 8.46	303 48 10.0	9.4	III	43.630	14 3 21.31	17 15 41.56	17 4013
77	9.5	25.8	27.8	29.9	32.3	34.3	c	4 30.02	306 16 10.0	9.2	III	46.355	14 4 42.74	14 46 42.11	14 3888
78	8.9	6.8	9.3	11.4	13.6	15.7	c	5 11.36	303 54 10.0	9.0	V	42.410	14 5 24.22	17 10 4.38	16 3821
79	8.8	33.7	35.9	38.0	40.4	42.6	c	6 38.12	302 46 10.0	9.0	III	47.320	14 6 51.06	18 16 33.41	18 3769
80	9.1	6.0	8.0	10.2	12.5	14.6	c	9 10.26	302(54)10.0	9.4	III	45.500	14 9 23.20	−18 9 7.14	−17 4043
81	8.8	52.4	54.4	56.2	58.0	0.4	a	13 25.86	307 0 10.0	9.2	III	42.200	14 13 38.56	−14 3 57.92	−13 3868
82	9.0	29.1	31.0	33.4	35.5	39.5	c_2 d_1	13 31.12	304 56 9.5	8.5	V	46.490	14 13 43.96	16 6 41.67	15 3847
83	9.1	6.5	8.8	11.0	13.2	15.4	c	16 10.98	302 42 9.2	8.3	III	47.760	14 16 23.97	18 20 23.81	18 3804
84	9.2	12.6	14.8	17.0	19.4	21.6	c	17 17.08	304 2 10.0	8.2	III	42.615	14 17 29.98	17 1 57.79	16 3856
85	9.0	11.1	13.3	15.3	19.7	21.4	c_3 d_2	18 11.16	306 52 10.0	8.2	V	43.670	14 18 23.88	14 11 29.35	13 3887
86	8.6	53.8	55.8	57.9	0.3	2.5	c	18 58.06	306 52 “	“	III B	40.970	14 19 10.79	14 15 35.10	14 3949
87	9.0	22.9	25.1	27.2	29.3	31.5	c	19 27.20	306 52 “	“	III B	41.820	14 19 39.93	14 15 18.67	14 3951
88	9.1	45.0	47.2	49.4	51.5	53.8	c	20 49.38	302 42 10.0	8.6	III	42.190	14 21 2.38	18 22 9.08	18 3821
89	8.5	37.6	39.7	41.9	44.0	46.3	c	21 41.90	306 40 10.0	8.9	III	44.470	14 21 54.64	14 23 13.43	14 3959
90	8.7	23.7	26.0	28.3	30.5	32.7	c	22 28.24	304 12 10.0	9.1	III	46.780	14 22 41.14	−16 50 35.69	−16 3872
91	9.0	9.5	11.7	13.4	15.5	17.7	a	23 43.70	303 16 10.0	8.5	I	41.100	14 23 56.68	−17 48 27.42	−17 4099
92	9.2	46.7	48.8	51.1	53.3	55.4	c	23 51.06	306 30 10.0	9.2	V	42.000	14 24 3.83	14 34 0.52	14 3965
93	9.4	43.7	45.8	48.0	50.3	54.4	c_2 d_1	24 45.88	306 54 10.0	8.5	V	43.400	14 24 58.62	14 9 32.73	13 3912
94	8.5	31.4	33.6	36.0	38.0	40.2	c	25 35.84	305 52	......	......	......	14 25 48.65	15 11 2	14 3970
95	9.3	..	15.6	17.6	19.6	21.4	e	25 47.68	304 30 10.0	8.0	VII	41.980	14 26 0.58	16 34 6.33	16 3885
96	9.0	4.7	7.0	9.1	11.4	13.5	c	28 9.14	(305 48)10.0	9.3	III	43.930	14 28 21.96	15 15 24.36	15 3898
97	8.2	44.8	47.1	49.0	50.9	52.9	e	28 19.13	304 40 10.0	8.9	VII	46.115	14 28 32.02	16 22 45.40	16 3892
98	9.0	57.4	59.5	1.8	4.0	6.1	c	30 1.76	303 28 10.0	8.7	III	42.670	14 30 14.75	17 35 55.18	17 4122
99	9.4	47.1	49.1	51.1	52.8	55.1	a	31 21.19	303 8 10.0	8.2	I A	39.390	14 31 34.20	17 53 44.44	17 4126
100	9.4	20.9	23.2	25.4	27.5	29.8	c	31 25.36	303 8 “	“	V B	44.790	14 31 38.38	17 58 29.51	17 4127

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
101	8.9	25.6	27.9	29.9	32.0	34.2	c	32 29.92	306 32 10.0	9.5	III	44.300	14 32 42.70	−14 31 14.06	−14 3996
102	9.0	8.8	10.8	13.2	15.4	17.6	c	34 13.16	304 2 10.0	8.5	III	44.955	14 34 26.13	17 1 8.64	16 3914
103	9.4	56.6	58.8	0.8	3.4	5.5	c	35 1.02	303 30 10.0	8.8	III	46.320	14 35 14.03	17 32 43.72	17 4146
104	8.8	55.4	57.6	59.8	2.0	4.1	c	35 59.78	302 50 10.0	9.0	III	40.865	14 36 12.84	18 14 30.18	18 3879
105	8.9	24.1	26.4	28.7	30.9	33.1	c	36 28.64	303 40 10.0	8.7	V	43.150	14 36 41.64	17 23 43.65	17 4152
106	8.7	27.0	29.2	31.3	33.5	35.6	c	39 31.32	303 28 10.0	8.4	III	46.390	14 39 44.34	17 34 41.51	17 4169
107	9.2	58.1	0.1	2.0	3.7	6.1	a	41 32.19	303 0 10.0	9.1	I	42.785	14 41 45.26	18 3 51.18	17 4177
108	8.0	9.8	11.9	13.7	15.6	18.0	a	42 43.79	304 8 10.0	9.3	I	44.400	14 42 56.78	16 55 16.27	16 3939
109	9.6	57.7	0.0	1.8	3.7	5.9	a	43 31.69	305 0 10.0	9.2	I C	48.440	14 43 44.63	16 8 23.24	15 3962
110	8.9	48.0	50.1	52.1	53.8	56.1	a	44 21.87	305 0 "	"	I A	45.940	14 44 34.81	−15 59 29.29	−15 3964
111	8.0	41.9	44.0	46.0	48.4	50.6	c	45 46.18	303 42 10.0	9.1	V	40.765	14 45 59.22	−17 22 26.68	−17 4196
112	9.1	14.1	16.2	18.3	20.8	22.7	c	46 18.42	303 42 "	"	V B	43.150	14 46 31.46	17 24 54.94	17 4202
113	9.1	12.1	14.3	16.6	18.7	21.0	c	47 16.54	302 46 10.0	8.0	V A	41.600	14 47 29.65	18 14 59.44	18 3923
114	9.7	23.0	25.1	27.1	29.1	31.2	e	47 56.96	302 46 "	"	VII B	42.915	14 48 10.08	18 21 2.33	18 3925
115	9.5	40.8	42.8	45.0	47.3	49.5	c	49 45.08	304 44 10.0	9.0	V B	39.570	14 49 58.06	16 23 59.65	16 3965
116	9.4	26.4	28.6	30.8	32.5	34.3	e	50 0.71	304 44 "	"	VII	44.030	14 50 13.69	16 19 19.52	16 3967
117	8.2	57.8	59.9	2.2	4.0	6.0	e	50 32.16	304 44 "	"	VII(B)	40.450	14 50 45.14	16 23 42.37	16 3970
118	9.2	2.8	5.0	7.1	9.5	11.7	c	52 7.22	305 30 10.0	8.6	III	41.540	14 52 20.15	15 34 5.08	15 3996
119	8.9	2.9	5.2	7.3	9.5	11.5	c	53 7.28	306 0 10.0	8.9	III	47.570	14 53 20.17	15 2 7.55	14 4082
120	9.6	38.2	40.4	42.7	44.9	47.0	c	54 42.64	306 0 "	"	III	47.540	14 54 55.53	−15 2 7.67	−14 4086
121	9.3	30.9	33.0	35.1	37.4	39.7	c	55 35.22	304 30 10.0	8.2	III A	46.210	14 55 48.22	−16 29 23.23	−16 3986
122	9.0	6.2	8.5	10.4	12.4	14.2	e	55 40.49	304 30 "	"	VII(C)	48.920	14 55 53.52	16 38 11.60	16 3987
123	9.6	7.9	10.2	12.3	14.5	16.6	c	57 12.30	305 56 10.0	9.3	V C	50.690	14 57 25.21	15 11 33.11	15 4013
124	8.8	49.1	51.1	53.0	54.9	57.1	a	58 22.76	305 56 "	"	I	53.585	14 58 35.66	15 4 10.53	14 4102
125	8.7	23.5	25.7	27.7	29.9	32.3	c	58 27.82	305 56 "	"	III	46.910	14 58 40.73	15 6 18.71	14 4105
126	9.4	33.7	35.8	38.0	40.2	42.4	c	59 38.02	305 36 10.0	8.0	III	47.030	14 59 50.96	15 26 17.65	15 4021
127	9.0	26.0	28.0	29.9	31.9	34.2	a	1 0.12	303 20 10.0	8.5	III	45.860	15 1 13.24	17 42 46.24	17 4252
128	8.6	34.8	37.0	39.1	41.3	43.5	c	1 39.14	306 2 10.0	8.9	III	42.230	15 1 52.05	15 1 47.53	14 4120
129	9.3	33.7	36.0	38.1	40.5	42.7	c	3 38.20	303 2 10.0	8.6	III	45.210	15 3 51.36	18 0 58 89	17 4260
130	9.4	31.3	33.4	35.2	37.2	39.5	a	5 5.52	302 52 10.0	8.2	I	43.330	15 5 18.70	−18 11 35.16	−18 3993
131	8.0	27.8	29.9	31.7	33.6	36.0	a	6 1.62	305 16 10.0	8.5	I	45.230	15 6 14.61	−15 46 50.96	−15 4047
132	9.3	39.0	41.2	43.1	44.8	47.3	a	8 13.07	304 2 10.0	8.6	I A	43.895	15 8 26.16	16 58 5.06	16 4034
133	9.0	14.6	16.8	18.8	21.1	23.4	c	8 18.94	304 2 "	"	III C	41.510	15 8 32.04	17 8 32.39	16 4035
134	9.5	31.0	33.1	35.2	37.4	39.4	c	9 35.22	305 58 10.0	8.2	III	41.300	15 9 48.16	15 6 3.65	14 4156
135	8.6	21.4	23.7	26.0	28.3	30.5	c	10 25.98	302 48 10.0	9.0	III	43.510	15 10 39.18	18 15 30.12	18 4017
136	8.8	9.3	11.4	13.6	15.8	18.0	c	11 13.62	305 50 10.0	8.1	III	46.120	15 11 26.57	15 12 31.08	15 4071
137	9.0	8.3	10.5	12.5	14.8	16.8	c	13 12.58	306 32 10.0	8.5	III	43.200	15 13 25.49	14 31 24.38	14 4171
138	8.6	46.5	48.6	50.6	53.0	55.1	c	14 50.76	306 40 10.0	9.5	III	45.290	15 15 3.66	14 22 42.91	14 4180
139	9.1	0.7	3.0	5.2	7.5	9.5	c	16 5.18	303 44 10.0	8.7	III	44.100	15 16 18.33	17 19 14.33	17 4316
140	9.0	45.5	47.4	49.7	51.8	54.1	c	16 49.70	306 32 10.0	8.9	V	43.760	15 17 2.62	−14 31 12.30	−14 4186
141	9.3	13.7	15.8	18.0	20.3	22.4	c	18 18.04	303 52 10.0	9.1	III	44.015	15 18 31.18	−17 11 14.68	−17 4322
142	9.0	38.7	41.0	43.0	45.2	47.3	c	20 43.04	306 56 10.0	9.1	III	42.610	15 20 55.93	14 7 32.06	13 4162
143	7.5	19.5	21.6	23.7	26.0	28.1	c	22 23.78	304 42 10.0	8.8	III	41.350	15 22 36.88	16 22 2.21	16 4089
144	9.1	25.6	27.8	29.7	32.0	34.0	c	23 29.82	306 58 10.0	8.2	III	43.130	15 23 42.72	14 5 21.60	13 4174
145	8.7	34.6	36.8	38.8	40.7	42.4	e	24 9.12	306 32 10.0	8.5	VII A	42.990	15 24 22.06	14 28 10.59	14 4218
146	9.0	58.5	0.6	2.8	5.1	7.2	c	26 2.84	302 54 10.0	9.0	III	45.750	15 26 16.10	18 8 42.18	17 4356
147	9.2	17.6	19.7	21.7	23.8	25.6	e	26 52.19	306 56 10.0	8.5	V	41.310	15 27 5.10	14 7 55.36	13 4188
148	9.0	22.2	24.2	26.5	28.6	30.8	c	28 26.46	305 10 9.5	7.8	III	45.150	15 28 39.53	15 52 46.82	15 4140
149	9.0	30.3	32.5	34.5	36.8	39.0	c	29 34.62	303 58 10.0	8.9	III	46 370	15 29 47.79	17 4 25.87	16 4116
150	9.1	45.8	47.8	49.6	51.6	54.0	a	31 19.75	304 8 10.0	8.7	I	45.700	15 31 32.92	−16 54 37.64	−16 4122
151	8.8	34.9	37.1	39.3	41.6	43.7	c	31 39.32	305 38 10.0	8.2	III	46.340	15 31 52.37	−15 24 21.17	−15 4146
152	9.3	52.0	54.0	56.2	58.4	2.5	c_2 d_1	31 54.05	305 38 "	"	V	50.370	15 32 7.09	15 23 3.67	15 4147
153	9.4	32.2	34.6	36.6	38.6	43.0	c_2 d_1	32 34.44	306 10 10.0	8.0	V	45.465	15 32 47.44	14 52 36.18	14 4249
154	9.0	5.6	7.6	9.8	12.0	14.1	c	34 9.82	306 6 10.0	8.0	III	44.720	15 34 22.83	14 56 50.25	14 4255
155	9.1	8.8	10.9	13.1	15.2	17.4	c	35 13.08	306 32 10.0	8.1	III	47.230	15 35 26.05	14 30 1.53	14 4260
156	8.2	21.9	24.0	25.8	27.6	29.9	a	36 55.64	305 22 10.0	7.8	I	42.570	15 37 8.73	15 41 32.72	15 4165
157	9.0	45.4	47.6	49.5	51.3	53.6	a	38 19.27	305 28 10.0	8.4	I	44.700	15 38 32.35	15 34 50.82	15 4173
158	9.5	32.8	35.0	37.4	39.5	41.6	c	38 37.26	304 58 10.0	8.3	III	44.100	15 38 50.39	16 5 3.88	15 4174
159	8.8	52.4	54.7	56.8	58.9	1.1	c	39 56.78	304 22 10.0	8.6	III A	43.020	15 40 9.96	16 38 11.46	16 4155
160	8.8	23.8	26.0	27.9	29.8	32.0	a	40 57.87	304 22 "	"	I C	43.230	15 41 11.08	−16 47 48.64	−16 4157
161	8.9	6.0	7.5	11.7	13.9	16.1	b_2 c_3	41 16.05	306 8 10.6	9.6	III	42.420	15 41 29.08	−14 55 30.95	14 4277
162	9.2	36.9	39.0	41.3	43.5	45.6	c	42 41.26	305 54 10.0	8.5	III B	39.530	15 42 54.32	15 13 41.51	15 4192
163	9.3	2.0	4.4	6.5	8.7	10.6	c	43 6.44	305 54 "	"	V A	41.310	15 43 19.50	15 6 38.80	14 4284
164	9.0	53.1	55.3	57.6	59.5	1.8	c	43 57.46	306 32 10.0	8.6	V	43.620	15 44 10.46	14 31 6.65	14 4288
165	8.6	29.0	31.0	33.3	35.4	37.7	c	44 33.28	304 0 10.0	8.4	V	45.375	15 44 46.51	17 2 40.33	16 4164
166	9.4	41.5	43.6	45.7	47.9	50.1	c	45 45.76	306 32 10.5	9.5	III A	42.450	15 45 58.76	14 28 13.54	14 4290
167	8.6	13.4	15.5	17.5	19.4	21.3	e	45 47.88	306 32 "	"	VII B	45.570	15 46 0.89	14 33 41.98	14 4291
168	6.	50.2	52.2	54.6	56.8	59.0	c	47 54.56	304 36 10.0	8.1	III	46.950	15 48 7.74	16 26 7.42	16 4174
169	9.1	......	22.7	26.9	28.6	31.4	c_5 d_3	48 18.46	305 40 10.0	9.1	VI	47.040	15 48 31.55	15 22 1.71	15 4209
170	9.4	28.2	30.3	32.5	34.7	36.9	c	49 32.52	304 6 10.0	8.0	V	42.220	15 49 45.75	−16 57 38.97	−16 4177
171	8.0	38.3	40.4	42.6	44.7	46.9	c	50 42.58	306 30 10.0	9.0	III	46.350	15 50 55.61	−14 32 12.04	−14 4314
172	8.0	7.8	10.0	12.1	14.5	16.6	c	51 12.20	305 18 10.0	8.9	V	45.400	15 51 25.34	15 44 33.50	15 4221
173	9.5	40.4	42.4	44.5	46.7	48.8	c	55 44.56	306 6 10.0	8.3	V	45.750	15 55 57.63	14 56 23.29	14 4334
174	9.3	51.2	53.1	55.4	57.5	59.8	c	56 55.40	303 54 10.0	8.5	III	44.020	15 57 8.68	17 9 2.65	17 4476
175	9.2	22.0	24.3	26.4	28.7	30.9	c	57 26.46	304 10 10.0	9.4	V	41.610	15 57 39.72	−16 53 47.41	−16 4203

Reduction Elements. Zone 116.

1895.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
May 27.3....	+0.061	—0.026	—0.027	+0.056	—0.014	—0.146
27.5....	+0.052	—0.003	—0.266			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	γ Corvi		Piazzi XII. 54		δ Corvi		β Corvi		48 Librae		δ Scorpii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	304 4 9.25		308 4 9.60		305 6 9.50		298 14 9.70		307 4 9.65		298 44 9.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.845	5 52.52	40.735	4 14.10	44.655	5 29.64	42.400	4 45.94		4 44.92		4 26.81
II Red. to Mer......	.865	0.17	.805	0.13	.685	0.16	.380	0.23	42.400	0.12	41.395	0.19
VI Inclination	.865		.710		.680		.415		.300	0.04	.385	0.04
VII Refraction.......	.895	1 24.4	.690	1 13.0	.675	1 21.3	.390	1 46.3	.330	1 16.3	.415	1 44.9

	β Scorpii pr.		11 Scorpii	
	° ′ ″		° ′ ″	
CIRCLE READING.	301 32 9.25		308 34 9.30	
	r	′ ″	r	′ ″
I Microm. Eq......	41.660	4 31.92	44.700	5 30.52
II Red. to Mer......	.700	0.19	.730	0.12
VI Inclination	.665		.740	
VII Refraction.......	.635	1 33.8	.710	1 12.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
4 H. Draconis........	12 7 24.35	11	+0.67	[—1.59]	39 16	. ..
γ Corvi.............	12 10 27.35	11	—0.08	—1.14	304 8 37.5	27.3
Piazzi XII. 54	12 15 33.41	11	—0.07	—1.07	308 7 10.8	27.2
δ Corvi.............	12 24 28.93	11	—0.07	—1.12	305 10 18.0	27.0
β Corvi.............	12 28 55.38	11	—0.09	—1.16	298 17 9.6	27.5
48 Librae...........	15 52 22.27	11	—0.07	—0.89	307 7 38.4	28.6
δ Scorpii...........	15 54 11.34	11	—0.08	—0.93	298 46 51.6	29.7
β Scorpii pr.........	15 59 23.72	11	—0.08	—0.91	301 35 7.6	28.1
11 Scorpii...........	16 1 50.24	11	—0.07	—0.86	308 38 27.6	29.3
Groombridge 750 S. P.............	16 3 31.54	7	—2.05	[—1.99]	55 46	....

h 12.330............*dt*.... .... s —1.122

Hourly rate............ +0.0619

Adopted Equator Point......... 321° 6′ 28.09″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
12 12	29.728	55.8	53.1
13 6	29.746	54.4	52.0
14 7	29.756	53.5	51.6
15 6	29.762	53.2	51.1
16 8	29.766	51.8	49.4

Notes.

δ Corvi, 113. Images unsteady.

92. Close double.

155. Mean observed.

Images bad and unsteady all evening.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
303	—0.078
304	0.076
305	0.074
306	0.073
307	0.071
308	—0.069

APPARENT RIGHT ASCENSION.	*A* = α to 1900.0 302°	303°	304°	305°	306°	307°	308°
h m	s	s	s	s	s	s	s
12 30	......	+13.707	+13.684	+13.662	+13.640	......	......
13 0	+13.838	13.802	13.766	13.729	13.694	+13.659	......
13 30	13.947	13.898	13.849	13.799	13.751	13.702	......
14 0	14.058	13.996	13.935	13.874	13.813	13.751	+13.690
14 30	14.168	14.093	14.020	13.948	13.876	13.804	13.732
15 0	14.273	14.188	14.105	14.023	13.940	13.859	13.777
15 30	+14.371	+14.278	14.186	14.095	14.004	13.915	+13.824
16 0	......	......	+14.264	+14.167	+14.069	+13.971	......

APPARENT RIGHT ASCENSION.	*D* = Z. D. N. to 1895.0							*R*					
	302°	303°	304°	305°	306°	307°	308°	302° 30′	303° 30′	304° 30′	305° 30′	306° 30′	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″	″
12 30	.....	+18.78	+18.50	+18.22	+17.93	.....	.....	90.01	86.66	83.48	80.45	77.57	74.80
13 0	+19.44	19.19	18.94	18.68	18.42	+18.16	.....	90.16	86.80	83.62	80.58	77.70	74.92
13 30	19.54	19.32	19.10	18.88	18.65	18.41	.....	90.24	86.88	83.70	80.65	77.77	74.99
14 0	19.37	19.18	18.99	18.80	18.60	18.41	+18.20	90.28	86.92	83.73	80.69	77.80	75.02
14 30	18.92	18.77	18.61	18.45	18.30	18.14	17.98	90.32	86.96	83.77	80.72	77.84	75.06
15 0	18.21	18.09	17.97	17.85	17.73	17.62	17.49	90.36	87.00	83.81	80.76	77.88	75.09
15 30	+17.21	+17.14	17.07	16.99	16.91	16.84	+16.75	90.51	87.14	83.95	80.89	78.00	75.21
16 0	.....	.....	+15.93	+15.90	+15.86	+15.83	.....	90.70	87.32	84.12	81.06	78.16	75.37

1895 MAY 28. ZONE 117. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.2	41.9	44.1	46.1	48.5	50.6	c	4 46.24	303 6 10.0 11.5	III	43.945	13 4 59.87	—17 57 46.03	—17 3783
2	9.1	2.1	4.3	6.6	8.8	10.9	c	6 6.54	303 46 10.0 11.9	III	42.610	13 6 20.14	17 18 9.32	17 3786
3	8.8	35.4	37.4	39.6	41.8	44.0	c	9 39.64	302 40 10.0 11.8	III	45.060	13 9 53.31	18 23 25.18	18 3567
4	9.1	28.1	30.2	32.4	34.7	36.8	c	11 32.44	303 40 10.0 11.9	III	47.780	13 11 46.08	17 22 29.69	17 3808
5	9.1	29.6	31.8	34.0	36.3	38.5	c	12 34.04	303 16 10.0 11.9	III	43.920	13 12 47.69	17 47 44.81	17 3811
6	6.	52.8	54.9	57.1	59.3	1.4	c	12 57.10	303 16 " "	III A	41.640	13 13 10.75	17 45 14.14	17 3813
7	9.3	54.2	56.2	58.5	0.8	2.9	c	13 58.52	303 8 10.0 11.3	III B	39.720	13 14 12.18	18 0 19.95	17 3819
8	9.0	31.3	33.6	35.5	37.6	39.2	e	14 5.36	303 8 " "	VII B	40.900	13 14 19.02	17 59 57.17	17 3820
9	8.7	56.7	58.8	1.0	3.3	5.5	c	15 1.06	303 8 " "	V A	39.515	13 15 14.72	17 53 55.32	17 3826
10	9.1	42.7	44.8	46.6	48.5	50.8	a	17 16.81	303 22 10.0 11.3	I C	49.710	13 17 30.47	—17 46 20.14	—17 3836
11	8.9	15.1	17.3	19.5	21.7	23.8	c	17 19.48	303 22 " "	III	47.245	13 17 33.14	—17 40 40.34	—17 3837
12	8.7	9.8	12.0	14.2	16.3	18.6	c	18 14.18	303 22 " "	III B	47.480	13 18 27.86	17 43 49.75	17 3841
13	8.2	30.4	32.7	34.9	37.1	39.3	c	21 34.88	303 38 10.0 11.7	III	47.655	13 21 48.56	17 24 31.86	17 3850
14	9.0	55.2	57.3	59.5	1.7	3.9	c	21 59.52	303 38 " "	III C	48.040	13 22 13.20	17 30 50.37	17 3851
15	8.1	47.1	49.1	51.4	53.6	55.7	c	23 51.38	302 50 10.0 11.1	III	47.280	13 24 5.09	18 12 40.39	17 3862
16	8.7	19.1	21.1	23.3	25.6	27.8	c	25 23.38	303 4 10.0 10.9	III	43.000	13 25 37.09	18 0 1.70	17 3872
17	9.0	21.6	23.8	26.0	28.2	30.4	c	26 26.00	304 0 10.0 11.5	III	45.190	13 26 39.68	17 3 16.45	16 3682
18	9.0	47.9	50.1	52.3	54.5	56.6	c	27 52.28	303 4 10.0 11.1	III	43.570	13 28 6.00	17 59 50.26	17 3883
19	8.9	44.9	46.9	49.2	51.4	53.6	c	28 49.20	304 14 10.0 11.7	III	42.000	13 29 2.89	16 50 16.52	16 3697
20	9.3	29.5	31.7	33.9	36.1	38.2	c	31 33.88	304 14 " "	III	47.720	13 31 47.57	—16 48 26.29	—16 3708
21	9.2	42.9	45.1	47.3	49.5	51.6	c	32 47.28	303 46 10.0 11.6	III	43.600	13 33 1.00	—17 17 46.56	—17 3895
22	9.2	17.6	19.8	22.0	24.3	26.5	c	34 22.04	303 10 10.0 11.6	III	46.230	13 34 35.78	17 52 57.59	17 3899
23	8.0	8.1	10.3	12.4	14.6	16.6	c	35 12.40	303 46 10.0 11.5	III	45.520	13 35 26.12	17 17 9.35	17 3903
24	8.0	0.2	2.4	4.6	6.7	9.0	c	36 4.58	303 0 10.0 11.0	III	46.590	13 36 18.34	18 2 51.21	17 3907
25	8.2	36.1	38.2	40.4	42.6	44.7	c	37 40.40	303 34 10.0 12.1	III	41.340	13 37 54.13	17 30 29.44	17 3910
26	9.0	58.2	0.5	2.7	4.7	7.0	c	38 2.62	303 34 " "	III C	46.970	13 38 16.36	17 35 8.29	17 3914
27	8.0	47.7	49.8	52.0	54.2	56.3	c	38 52.00	303 34 " "	III A	45.050	13 39 5.74	17 26 3.61	17 3918
28	9.5	23.3	25.4	27.5	29.9	32.0	c	39 27.62	303 34 " "	III C	46.580	13 39 41.36	17 35 15.53	17 3920
29	8.5	32.8	35.1	37.4	39.6	41.8	c	40 37.34	303 34 " "	III	41.450	13 40 51.09	17 30 26.79	17 3926
30	9.5	11.1	13.2	15.3	17.5	19.6	c	41 15.34	303 34 " "	III B	41.350	13 41 29.10	—17 33 42.65	—17 3929
31	8.0	10.6	12.7	14.9	17.2	19.5	c	42 14.98	302 58 10.0 11.6	III	47.900	13 42 28.77	—18 4 24.76	—17 3934
32	5.5	8.0	10.3	12.5	14.6	16.7	c	44 12.42	303 32 10.0 10.6	III C	43.760	13 44 26.19	17 38 9.64	17 3937
33	9.0	15.4	17.3	19.3	21.1	23.5	a	48 49.40	303 32 " "	I A	44.370	13 49 3.18	17 28 15.50	17 3958
34	8.8	2.9	5.1	7.4	9.5	11.7	c	49 7.32	303 50 10.0 11.0	III	41.130	13 49 21.09	17 14 31.17	17 3959
35	8.3	1.2	3.4	5.6	7.8	9.9	c	50 5.58	303 18 10.0 11.2	V	44.250	13 50 19.37	17 45 32.48	17 3961
36	9.3	28.1	30.3	32.4	34.7	36.9	c	51 32.48	303 6 10.0 11.1	III	44.510	13 51 46.30	17 57 27.96	17 3966
37	9.4	18.2	20.5	22.7	24.7	26.9	c	52 22.60	302 56 10.0 11.7	III C	47.190	13 52 36.44	18 13 3.54	18 3706
38	9.0	58.2	0.4	2.4	4.3	6.3	e	52 32.22	302 56 " "	V	43.540	13 52 46.05	18 7 46.51	17 3969
39	7.8	16.3	18.4	20.6	22.8	25.0	c	53 20.62	302 56 " "	V	42.200	13 53 34.46	18 8 12.06	17 3971
40	9.1	46.8	49.1	51.3	53.5	55.6	c	54 51.26	302 56 " "	III B	42.130	13 55 5.10	—18 11 27.24	—17 3978
41	9.3	13.4	15.4	17.2	19.2	21.5	a	56 47.38	303 54 10.0 11.6	I C	47.270	13 57 1.18	—17 14 58.47	—17 3984
42	8.7	53.0	55.1	57.0	59.0	1.1	a	57 27.06	303 54 " "	I	50.630	13 57 40.86	17 7 26.58	16 3786
43	9.2	26.7	29.0	31.0	33.2	35.3	c	57 31.04	303 54 " "	III A	47.115	13 57 44.83	17 5 19.78	16 3787
44	8.9	0.1	2.4	4.4	6.3	8.2	e	57 34.33	303 54 " "	VII C	47.940	13 57 48.13	17 14 44.36	17 3987
45	8.6	21.1	23.0	24.9	26.8	29.1	a	59 55.08	303 28 10.0 12.0	I	44.095	14 0 8.90	17 35 32.59	17 4002
46	8.9	51.0	53.3	55.5	57.6	59.8	c	59 55.44	303 28 " "	III	42.450	14 0 9.26	17 36 4.27	17 4003
47	9.1	8.4	10.3	12.2	14.2	16.5	a	1 42.54	302 44 10.0 11.4	I A	39.870	14 1 56.42	18 17 41.35	18 3751
48	9.5	57.4	59.5	1.9	4.0	6.4	c	2 1.84	302 44 " "	III C	44.860	14 2 15.73	18 25 47.12	18 3752
49	9.4	28.2	30.5	32.5	34.9	37.0	c	2 32.62	302 44 " "	III B	42.155	14 2 46.51	18 23 25.99	18 3754
50	8.0	12.9	15.2	17.3	19.5	21.8	c	3 17.34	303 2 10.0 10.7	III	43.930	14 3 31.21	—18 1 37.14	—17 4015
51	9.3	45.6	47.9	49.9	52.1	54.2	c	4 49.94	303 36 10.0 11.9	III B	42.960	14 5 3.78	—17 31 7.15	—17 4022
52	9.1	5.1	7.2	9.3	11.6	13.8	c	6 9.40	303 36 " "	III A	42.920	14 6 23.24	17 24 39.21	17 4025
53	9.3	27.3	29.4	31.5	33.6	35.9	c	6 31.54	303 36 " "	III C	44.270	14 6 45.39	17 33 54.57	17 4027
54	9.1	41.1	43.1	45.3	47.5	49.7	c	8 45.34	303 10 10.0 11.0	III	47.380	14 8 59.22	17 52 29.20	17 4038
55	8.8	56.9	59.2	1.3	3.6	5.8	c	9 1.36	303 10 " "	V C	50.960	14 9 15.25	17 57 47.05	17 4039
56	8.9	14.3	16.4	18.6	20.9	22.9	c	10 18.62	303 10 " "	III B	41.880	14 10 32.51	17 57 28.44	17 4049
57	7.5	13.8	15.8	18.0	20.3	22.3	c	11 18.04	303 0 10.0 10.6	III B	42.470	14 11 31.94	18 7 17.66	17 4053
58	9.3	31.6	33.7	35.8	38.1	40.3	c	11 35.90	303 0 " "	V (A)	39.770	14 11 49.80	18 1 40.94	17 4056
59	7.5	18.2	20.3	22.3	24.1	26.5	a	12 52.47	302 48 10.0 11.1	III	45.180	14 13 6.40	18 15 11.60	18 3789
60	8.0	35.9	37.9	40.2	42.4	44.5	c	13 40.18	303 0 10.0 11.6	III	43.350	14 13 54.10	—18 3 45.67	—17 4065
61	8.5	39.0	41.2	43.5	45.4	47.7	c	14 43.36	304 2 10.0 11.4	III (B)	45.830	14 14 57.22	—17 4 8.90	—16 3843
62	8.6	4.8	7.0	9.1	11.4	13.5	c	15 9.16	304 2 " "	III	44.710	14 15 23.02	17 1 16.22	16 3844
63	9.2	32.5	34.8	36.9	41.5	43.0	c_3 d_2	15 32.63	302 42 10.0 9.7	V	44.520	14 15 46.57	18 21 24.63	18 3800
64	9.2	59.9	2.0	4.1	6.3	8.5	c	17 4.16	303 28 10.0 11.2	III	42.220	14 17 18.05	17 36 5.36	17 4076
65	9.1	46.5	48.6	50.7	52.7	54.5	e	17 20.60	303 28 " "	VII	43.030	14 17 34.50	17 35 49.42	17 4078
66	9.0	43.3	45.5	47.7	49.8	52.0	c	18 47.66	303 28 " "	III B	43.970	14 19 1.56	17 38 45.44	17 4083
67	9.0	11.5	13.6	16.0	18.2	20.3	c	21 15.92	303 6 10.0 11.0	III	48.580	14 21 29.85	17 56 3.56	17 4090
68	9.1	33.9	36.0	38.2	40.4	42.6	c	21 38.22	303 6 " "	III	45.110	14 21 52.15	17 57 10.08	17 4092
69	9.3	24.3	26.3	28.1	30.0	32.5	a	22 58.26	303 58 10.0 11.0	I B	46.370	14 23 12.16	17 7 56.78	16 3874
70	9.2	58.5	0.8	2.9	5.1	7.3	c	23 2.92	303 58 " "	III	46.375	14 23 16.82	—17 4 42.86	—16 3876

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ″ ″	r	h m s	° ′ ″	°
71	9.6	55.5	57.5	59.6	2.1	4.3	c	23 59.80	303 30 10.0 11.6	III 43.650	14 24 13.73	—17 33 36.01	—17 4102
72	9.2	52.1	54.1	56.3	58.5	0.7	c	25 56.34	302 46 10.0 11.1	III 49.780	14 26 10.32	18 15 40.43	18 3843
73	8.9	39.5	41.6	43.7	46.1	48.1	c	26 43.80	302 46 " "	III C 47.550	14 26 57.79	18 22 50.01	18 3846
74	9.3	20.8	23.0	25.2	27.4	29.5	c	28 25.18	303 52 10.0 11.1	III A 46.480	14 28 39.09	17 7 25.40	16 3894
75	9.4	21.4	23.5	25.4	27.2	29.6	a	29 55.47	303 52 " "	I C 48.820	14 30 9.40	17 16 21.66	17 4119
76	9.5	54.6	56.8	58.9	1.0	3.4	c	31 58.94	303 42 10.0 11.0	III B 50.040	14 32 12.88	17 22 45.19	17 4128
77	9.1	37.2	39.4	41.5	43.7	45.8	c	32 41.52	303 42 " "	III C 48.350	14 32 55.46	17 26 30.39	17 4133
78	9.2	22.3	24.5	26.5	28.8	30.9	c	33 26.60	303 42 " "	III A 44.630	14 33 40.54	17 18 0.23	17 4136
79	8.8	1.1	3.4	5.3	7.3	9.3	e	33 35.30	303 42 " "	V C 45.750	14 33 49.26	17 27 19.69	17 4138
80	9.3	40.3	42.4	44.6	47.0	49.1	c	34 44.68	303 42 " "	III 44.350	14 34 58.64	—17 21 19.68	—17 4144
81	9.0	4.1	6.1	8.0	9.9	12.2	a	36 38.21	303 14 10.0 11.1	I B 42.285	14 36 52.20	—17 53 13.99	—17 4154
82	9.4	36.3	38.4	40.7	42.8	45.0	c	36 40.64	303 14 " "	III A 40.310	14 36 54.63	17 47 23.70	17 4155
83	9.1	18.3	20.5	22.5	24.6	26.5	e	36 52.42	303 14 " "	VII C 46.630	14 37 6.42	17 55 2.82	17 4157
84	8.4	59.5	.....	3.8	6.0	8.0	c	40 3.78	303 52 10.0 10.9	III C 48.210	14 40 17.74	17 16 30.74	17 4172
85	9.2	48.3	50.5	52.6	54.9	57.0	c	40 52.66	303 52 " "	III A 48.370	14 41 6.62	17 6 46.12	16 3938
86	9.1	35.7	37.9	40.0	42.2	44.3	c	42 40.02	303 24 10.0 11.3	III 47.570	14 42 54.01	17 38 16.60	17 4180
87	8.8	8.5	10.5	12.4	14.3	16.7	a	44 42.69	302 54 10.0 11.3	I B 43.020	14 44 56.74	18 12 58.77	18 3908
88	9.4	3.3	5.4	7.1	9.2	11.5	a	45 37.51	302 54 " "	I (C) 43.490	14 45 51.57	18 16 2.84	18 3915
89	8.6	37.3	39.4	41.7	43.9	46.0	c	45 41.66	302 54 " "	III A 44.115	14 45 55.71	18 6 9.28	17 4195
90	8.9	26.2	28.3	30.5	32.4	34.3	e	46 0.44	304 8 10.0 11.5	V 47.490	14 46 14.40	—16 54 14.86	—16 3952
91	8.7	17.1	19.3	21.5	23.6	25.8	c	49 21.46	303 18 10.0 11.4	III 44.490	14 49 35.49	—17 45 14.21	—17 4211
92	9.2	39.3	41.6	43.5	45.7	47.9	c	51 43.60	303 30 10.0 12.1	III 49.715	14 51 57.62	[17 31 32.29]	17 4219
93	9.3	.....	55.4	57.8	59.8	4.2	c_3 d_1	51 55.51	303 30 " "	V B 44.295	14 52 9.54	[17 36 30.36]	17 4220
94	9.1	47.0	49.2	51.6	53.6	55.8	c	52 51.44	303 46 10.0 11.7	V 46.040	14 53 5.44	17 16 41.85	17 4225
95	8.6	.....	27.7	29.8	32.0	34.1	c	54 29.81	302 50 10.0 11.9	V 42.840	14 54 43.89	18 13 45.61	18 3945
96	9.3	.....	1.3	3.4	5.6	7.7	c	56 3.41	303 30 10.0 11.6	III (C) 45.380	14 56 17.46	17 39 21.56	17 4237
97	9.2	50.5	52.6	54.9	.....	1.3	c_2 d_1	56 52.66	303 30 " "	V 41.175	14 57 6.71	17 34 14.99	17 4241
98	8.3	5.1	7.1	8.9	10.7	13.2	a	58 39.09	303 30 " "	I A 41.860	14 58 53.14	17 30 46.81	17 4246
99	9.1	36.8	38.7	40.9	43.2	45.1	c	58 40.94	303 30 " "	III A 41.870	14 58 54.99	17 30 46.82	17 4247
100	9.2	21.6	23.6	25.7	27.7	30.0	c	59 25.72	303 30 " "	III (A) 46.250	14 59 39.78	—17 29 22.56	—17 4249
101	9.4	33.3	35.6	37.7	39.9	42.0	c	1 37.70	304 2 10.0 10.5	III A 41.720	15 1 51.72	—16 58 47.81	—16 4007
102	9.6	50.1	52.3	54.5	56.7	58.7	c	1 54.46	304 2 " "	V 47.850	15 2 8.48	17 0 4.39	16 4009
103	9.1	40.9	43.1	45.3	47.5	49.5	c	3 45.26	304 2 " "	III 46.030	15 3 59.29	17 0 38.88	16 4017
104	9.5	12.6	14.4	16.4	18.4	20.7	a	5 46.57	303 38 10.0 10.6	I 44.840	15 6 0.64	17 25 2.20	17 4268
105	9.4	50.9	53.0	55.2	57.5	59.6	c	5 55.24	303 38 " "	III A 41.710	15 6 9.32	17 22 47.95	17 4270
106	9.1	53.6	55.6	57.9	0.1	2.1	c	6 57.86	304 18 10.0 11.5	III 43.240	15 7 11.89	16 45 30.21	16 4029
107	9.4	48.3	50.6	52.6	55.1	57.3	c	7 52.78	303 0 10.0 10.5	III B 43.400	15 8 6.92	18 6 45.45	17 4281
108	7.8	30.3	32.5	34.7	36.9	39.0	c	8 34.68	303 0 " "	III 44.120	15 8 48.81	18 3 17.35	17 4283
109	9.0	2.9	5.1	7.0	9.0	10.9	e	8 36.89	303 0 " "	VII 42.180	15 8 51.02	18 3 54.20	17 4284
110	9.1	43.1	45.2	47.4	49.5	51.5	c	11 47.34	304 14 10.0 10.9	III 42.540	15 12 1.39	—16 49 42.74	—16 4049
111	8.3	58.3	0.4	2.3	4.0	6.5	a	13 32.45	303 12 10.0 11.0	I B 41.070	15 13 46.58	—17 55 27.38	—17 4300
112	9.5	29.9	32.4	34.6	36.7	38.7	c	13 34.46	303 12 " "	III C 42.970	15 13 48.60	17 58 4.07	17 4301
113	9.0	11.6	13.9	16.0	18.2	20.5	c	14 16.04	303 12 " "	III 45.180	15 14 30.17	17 50 54.46	17 4307
114	7.3	54.9	57.0	59.2	1.4	3.5	c	14 59.20	303 12 " "	III A 44.995	15 15 13.33	17 47 43.40	17 4312
115	8.9	18.4	20.6	22.8	25.0	27.2	c	15 22.80	303 12 " "	III 43.570	15 15 36.93	17 51 25.03	17 4314
116	9.0	15.1	17.4	19.6	21.8	23.8	c	16 19.54	303 12 " "	III B 46.690	15 16 33.68	17 53 38.94	17 4317
117	9.3	50.4	52.6	54.7	56.9	59.0	c	18 54.72	302 58 10.0 11.0	III A 45.870	15 19 8.89	18 1 26.19	17 4325
118	8.6	52.0	54.2	56.2	58.5	0.7	c	19 56.32	302 58 " "	III C 49.930	15 20 10.50	18 9 49.35	18 4061
119	9.3	36.9	39.2	41.1	43.2	45.0	e	20 10.96	302 48 10.0 10.5	VII 47.320	15 20 25.15	18 14 12.82	18 4063
120	9.1	32.6	34.6	36.9	39.0	41.2	c	21 36.86	302 48 " "	III 46.980	15 21 51.06	—18 14 19.26	—18 4067
121	8.0	7.0	9.2	11.0	12.9	15.3	a	23 41.10	304 4 10.0 11.1	I C 43.650	15 23 55.21	—17 5 45.42	—16 4093
122	9.0	43.5	45.6	47.5	49.4	51.6	a	24 17.51	304 4 " "	I A 48.120	15 24 31.61	16 54 37.70	16 4097
123	9.1	17.7	19.7	21.6	23.5	25.8	a	26 51.76	303 34 10.0 11.0	I (C) 44.835	15 27 5.91	17 35 23.31	17 4361
124	9.2	51.4	53.6	55.7	57.9	0.1	c	26 55.74	303 34 " "	III A 45.845	15 27 9.88	17 25 22.36	17 4362
125	8.6	27.2	29.5	31.7	34.0	36.0	c	28 31.68	303 46 10.0 11.5	III C 49.950	15 28 45.84	17 21 43.60	17 4368
126	9.0	32.7	35.0	37.2	39.5	41.5	c	29 37.18	303 46 " "	III A 42.680	15 29 51.33	17 14 21.43	17 4372
127	9.4	30.2	32.5	34.6	36.9	39.1	c	30 34.66	303 46 " "	III B 39.600	15 30 48.82	17 21 48.68	17 4375
128	8.5	12.2	14.3	16.4	18.6	20.8	c	31 16.46	303 2 10.0 10.8	III 46.860	15 31 30.67	18 0 17.73	17 4379
129	8.9	28.9	31.2	33.2	35.4	37.6	c	32 33.26	303 2 " "	III C 45.300	15 32 47.49	18 7 14.25	17 4386
130	9.2	29.0	31.3	33.3	35.6	37.8	c	33 33.40	303 2 " "	III A 40.420	15 33 47.62	17 59 6.21	—17 4393
131	9.0	59.7	1.8	3.5	5.7	8.0	a	33 33.91	303 2 " "	I 44.620	15 33 48.13	—18 0 59.86	—17 4394
132	9.3	53.7	55.8	58.1	0.2	2.3	c	34 58.02	304 2 10.0 10.2	III A 42.110	15 35 12.16	16 58 30.53	16 4138
133	9.0	10.7	12.9	15.0	17.2	19.5	c	36 15.06	304 2 " "	III B 47.340	15 36 29.21	17 3 18.21	16 4144
134	9.3	4.0	6.2	8.4	10.7	12.7	c	37 8.40	303 38 10.0 11.3	III A 41.410	15 37 22.58	17 22 43.97	17 4405
135	9.4	46.9	49.2	51.2	53.5	55.5	c	37 51.26	303 38 " "	III B 41.610	15 38 5.44	17 29 8.34	17 4409
136	9.3	51.0	53.1	55.3	57.5	59.8	c	38 55.34	303 38 " "	III A 40.060	15 39 9.54	17 23 9.31	17 4413
137	9.4	1.9	4.2	6.3	8.5	10.5	c	40 6.28	303 16 10.0 11.5	III B 40.440	15 40 20.52	17 51 31.13	17 4415
138	9.3	19.5	21.6	23.9	26.0	28.2	c	40 23.84	303 16 " "	V B 45.830	15 40 38.07	17 49 47.64	17 4417
139	8.6	18.3	20.4	22.6	24.7	26.9	c	41 22.58	303 16 " "	V 45.000	15 41 36.81	17 46 49.06	17 4421
140	9.5	3.0	5.3	7.6	9.7	11.8	c	42 7.48	303 34 10.0 10.6	III 47.510	15 42 21.68	—17 28 0.24	—17 4425

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
141	8. 1	0. 7	3. 0	5. 2	7. 3	9. 6	c	44 5. 16	303 18 10. 0 10. 7	III C 48. 280	15 44 19. 40	−17 50 12. 61	−17 4432
142	8. 8	54. 5	56. 6	58. 8	1. 0	3. 1	c	44 58. 80	303 18 " "	III 45. 710	15 45 13. 04	17 44 34. 66	17 4438
143	8. 0	13. 7	15. 9	18. 0	20. 3	22. 5	c	46 18. 08	302 54 10. 0 10. 2	III 46. 960	15 46 32. 36	18 8 11. 80	17 4442
144	8. 5	15. 1	17. 3	19. 3	21. 7	23. 8	c	47 19. 44	303 24 10. 0 11. 0	III 40. 630	15 47 33. 68	17 40 10. 95	17 4445
145	8. 7	17. 5	19. 5	21. 4	23. 3	25. 6	a	49 51. 59	303 24 " "	I C 48. 070	15 50 5. 85	17 44 14. 47	17 4450
146	9. 0	56. 6	58. 8	0. 8	3. 0	5. 2	c	50 0. 88	303 24 " "	III A 45. 580	15 50 15. 13	17 35 20. 65	17 4451
147	8. 0	28. 0	29. 9	31. 9	33. 7	36. 0	a	52 1. 87	304 16 10. 0 11. 0	I 41. 240	15 52 16. 05	16 47 54. 90	16 4185
148	9. 4	19. 1	21. 3	23. 4	25. 9	27. 9	c	52 23. 52	304 0 10. 0 10. 8	III B 42. 780	15 52 37. 73	17 6 40. 32	16 4189
149	9. 5	12. 1	14. 4	16. 3	18. 2	20. 3	e	52 46. 32	304 0 " "	V C 42. 050	15 53 0. 54	17 10 6. 77	17 4463
150	8. 7	46. 8	49. 1	51. 3	53. 1	55. 0	e	53 21. 15	304 0 " "	V A 42. 980	15 53 35. 36	−17 0 7. 71	−16 4193
151	9. 3	40. 7	43. 0	45. 2	47. 3	49. 6	c	54 45. 16	303 50 10. 0 10. 4	III 44. 090	15 54 59. 39	−17 13 1. 06	−17 4468
152	9. 0	2. 1	4. 3	6. 1	7. 9	10. 4	a	56 36. 26	303 26 10. 0 11. 0	I A 40. 285	15 56 50. 52	17 34 59. 81	17 4471
153	9. 4	39. 0	41. 1	43. 2	45. 5	47. 7	c	56 43. 30	303 26 " "	III 44. 490	15 56 57. 57	17 36 53. 68	17 4474
154	7. 8	58. 4	0. 6	2. 8	5. 1	7. 2	c	59 2. 82	302 48 10. 0 10. 6	III 41. 430	15 59 17. 16	18 15 53. 88	18 4228
155	8. 5	33. 9	35. 9	37. 8	39. 8	42. 0	a	1 7. 83	304 22 10. 0 10. 6	I 45. 850	16 1 22. 03	16 40 23. 29	16 4219
156	8. 8	16. 7	19. 0	21. 2	23. 5	25. 5	c	1 21. 1[illegible]	303 2 10. 0 10. 5	III C 49. 150	16 1 35. 52	18 5 51. 22	17 4493
157	8. 0	2. 5	4. 6	6. 9	9. 0	11. 1	c	2 6. 82	303 2 " "	III A 42. 320	16 2 21. 14	17 58 20. 66	17 4494
158	8. 3	……	4. 0	6. 0	10. 2	11. 9	c_4 d_2	6 1. 65	303 10 10. 0 10. 6	V C 47. 440	16 6 15. 98	17 58 21. 65	17 4511
159	8. 6	22. 2	24. 3	26. 6	29. 0	31. 0	c	7 26. 62	303 10 " "	III A 41. 090	16 7 40. 94	17 50 41. 98	17 4514
160	9. 0	1. 0	3. 2	5. 2	7. 5	9. 7	c	8 5. 32	303 10 " "	III B 42. 970	16 8 19. 66	−17 56 34. 16	−17 4518
161	9. 1	39. 2	41. 4	43. 5	45. 7	47. 4	e	8 13. 50	303 52 10. 0 10. 9	V 47. 580	16 8 27. 77	−17 9 49. 12	−17 4519
162	8. 0	23. 5	25. 8	27. 9	30. 1	32. 2	c	12 27. 90	303 52 " "	III 51. 620	16 12 42. 18	17 8 30. 21	17 4534
163	9. 3	29. 0	31. 1	33. 0	35. 0	37. 3	a	14 3. 12	303 52 " "	I C 51. 080	16 14 17. 42	17 15 7. 18	17 4542
164	8. 8	6. 8	9. 0	11. 0	13. 3	15. 4	c	14 11. 10	302 52 10. 0 10. 7	III 46. 220	16 14 25. 49	18 10 16. 59	18 4264
165	9. 0	59. 5	1. 6	3. 9	6. 0	8. 3	c	15 3. 86	303 34 10. 0 11. 0	V 48. 810	16 15 18. 18	17 27 24. 07	17 4548
166	9. 2	19. 2	21. 2	23. 2	25. 1	27. 3	a	16 53. 19	304 14 10. 0 10. 2	I C 44. 990	16 17 7. 46	16 55 2. 32	16 4279
167	8. 0	50. 5	52. 6	54. 8	57. 1	59. 2	c	16 54. 84	304 14 " "	III 49. 900	16 17 9. 10	16 47 0. 91	16 4280
168	8. 6	56. 6	58. 7	0. 9	3. 1	5. 3	c	21 0. 92	303 28 10. 0 11. 1	III A 41. 420	16 21 15. 25	17 32 29. 80	17 4572
169	9. 0	55. 9	58. 1	0. 2	2. 4	4. 6	c	22 0. 24	303 28 " "	III B 46. 550	16 22 14. 60	17 37 19. 46	17 4575
170	9. 2	48. 2	50. 5	52. 5	54. 3	56. 2	e	26 22. 30	303 16 10. 0 11. 5	VII 42. 600	16 26 36. 68	−17 47 19. 76	−17 4594
171	9. 5	3. 4	5. 4	7. 2	9. 0	11. 4	a	28 37. 24	304 20 10. 0 10. 2	I 44. 980	16 28 51. 53	−16 42 30. 83	−16 4308
172	8. 9	45. 5	47. 6	49. 9	52. 1	54. 4	c	28 49. 90	302 58 10. 0 10. 4	III 41. 730	16 29 4. 32	−18 5 37. 53	−17 4601

Reduction Elements. Zone 117.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
May 28.3....	−0. 048	−0. 093	−0. 253	−0. 039	−0. 087	−0. 314
28.5....	−0. 030	−0. 081	−0. 376			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		β Corvi		χ Virginis		ψ Virginis		Lalande 24277		ψ Ophiuchi		α Scorpii	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	298 14 11. 45		313 38 11. 30		312 4 11. 20		301 2 11. 00		301 14 10. 50		294 50 10. 30	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	42. 300	4 44. 19	39. 875	3 57. 38	42. 950	4 56. 60	41. 120	4 22. 29		6 7. 90		6 9. 48
II	Red. to Mer......	. 310	0. 23	. 870	0. 07	. 960	0. 09	. 180	0. 20		0. 20		0. 26
VI	Inclination	. 335		. 865		. 955		. 210		46. 690	0. 10	46. 765	0. 10
VII	Refraction.......	. 270	1 43. 8	. 845	58. 7	. 940	1 2. 1	. 140	1 33. 0	. 650	1 33. 1	. 740	2 1. 7
		φ Ophiuchi		ζ Ophiuchi									
		° ′ ″		° ′ ″									
	CIRCLE READING.	304 40 10. 50		310 40 10. 40									
		r	′ ″	r	′ ″								
I	Microm. Eq......	41. 350	4 25. 58	45. 970	5 54. 19								
II	Red. to Mer......	. 355	0. 16	. 945	0. 10								
VI	Inclination	. 330		. 955									
VII	Refraction.......	. 300	1 21. 8	. 950	1 5. 9								

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
β Corvi	12 28 54.40	11	−0.39	+0.11	298 17 12.1	30.0
χ Virginis	12 33 51.80	11	−0.33	+0.13	313 41 10.1	29.3
ψ Virginis	12 48 55.78	11	−0.34	+0.14	312 8 5.8	29.4
43 H. Cephei S. P	12 54 12.01	11	−2.26	[+0.78]	55 22	....
Lalande 24277	12 58 10.89	11	−0.38	+0.27	301 5 0.5	30.0
Groombridge 750 S. P	16 3 29.86	6	−2.19	[−0.09]	55 46	....
ψ Ophiuchi	16 18 0.39	11	−0.37	+0.41	301 18 45.6	30.1
α Scorpii	16 23 1.20	11	−0.40	+0.36	294 54 18.4	28.9
φ Ophiuchi	16 25 10.58	11	−0.36	+0.37	304 43 14.4	30.1
ζ Ophiuchi	16 31 25.41	11	−0.34	+0.33	310 44 58.8	28.4

h 12.708 .... *dt* .... s +0.162

Hourly rate .... +0.0557

Adopted Equator Point .... 321° 6′ 29″.52

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
12 30	29.912	68.8	67.4
13 30	29.923	67.1	65.4
14 30	29.927	65.9	63.4
15 25	29.930	65.0	62.5
16 30	29.927	63.8	61.2

Notes.

Lalande 24277. Images somewhat unsteady.

3. Close double.

32. Images somewhat unsteady; air very transparent.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				$D =$ Z. D. N. to 1895.0				R		
			302°	303°	304°	305°	302°	303°	304°	305°	302° 30′	303° 30′	304° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
303	−0.368	13 0	+13.841	+13.805	+13.768	+13.733	+19.47	+19.22	+18.97	+18.70	88.13	84.84	81.73
304	0.364	13 30	13.949	13.899	13.851	13.801	19.60	19.37	19.14	18.92	88.31	85.02	81.90
305	−0.361	14 0	14.057	13.995	13.932	13.871	19.43	19.24	19.03	18.84	88.49	85.19	82.07
		14 30	14.163	14.090	14.016	13.943	18.98	18.82	18.66	18.50	88.65	85.35	82.22
		15 0	14.264	14.180	14.097	14.014	18.26	18.13	18.02	17.90	88.76	85.45	82.32
		15 30	14.361	14.268	14.178	14.085	17.27	17.19	17.11	17.03	88.86	85.55	82.41
		16 0	14.453	14.351	14.250	14.154	16.05	16.01	15.97	15.94	88.96	85.64	82.51
		16 30	+14.528	+14.424	+14.320	+14.217	+14.58	+14.59	+14.60	+14.60	89.06	85.74	82.60

1895 JUNE 1. ZONE 118. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.0	3.0	4.9	6.8	8.6	11.0	a	17 36.49	306 40 10.0 10.6	I	42.220	13 17 55.14	−14 24 3.42	−14 3709[1]
2	9.0	32.6	34.7	36.9	38.9	41.0	c	17 36.82	306 40 " "	III	42.160	13 17 55.47	14 24 4.67	14 3709[2]
3	9.0	30.8	32.9	34.8	36.6	38.9	a	37 4.44	306 32 10.0 10.3	I	41.480	13 37 23.15	14 32 14.79	14 3781
4	8.6	8.3	10.5	12.6	14.9	17.0	c	37 12.66	306 32 " "	III	42.920	13 37 31.37	14 31 47.23	14 3783
5	8.8	55.5	57.6	59.8	2.0	4.2	c	38 59.82	303 50 10.3 11.1	III	46.730	13 39 18.67	17 12 40.19	16 3737
6	9.1	51.1	53.4	55.6	57.6	59.8	c	39 55.50	303 50 " "	III B	50.710	13 40 14.36	17 14 37.68	17 3922
7	8.9	39.5	41.7	43.9	46.2	48.3	c	52 43.92	303 56 9.3 9.7	III	41.525	13 53 2.82	17 8 18.37	16 3773
8	8.8	5.9	8.2	10.3	12.5	14.6	c	53 10.30	303 56 " "	III	40.575	13 53 29.21	17 8 36.53	16 3774
9	8.9	40.9	43.0	44.7	46.7	49.0	a	58 14.93	303 40 10.0 11.0	I	45.790	13 58 33.86	17 22 55.02	17 3990
10	7.8	56.2	58.2	0.1	1.9	4.3	a	59 29.76	306 40 10.0 11.1	I	46.390	13 59 48.51	−14 22 35.42	−14 3867
11	8.8	22.9	25.1	27.3	29.7	31.8	c	59 27.36	303 42 10.0 10.5	V	46.685	13 59 46.29	−17 20 37.79	−17 4000
12	9.1	56.9	59.1	1.1	3.3	5.1	e	59 31.12	303 42 " "	VII C	51.490	13 59 50.06	17 25 31.66	17 4001
13	9.1	54.1	56.4	58.3	0.4	2.2	■	0 28.33	303 48 9.0 10.0	V A	42.770	14 0 47.27	17 12 38.89	16 3799
14	9.0	26.2	28.5	30.6	32.5	34.4	e	1 0.47	303 48 " "	VII C	45.020	14 1 19.42	17 21 35.98	17 4008
15	8.9	46.4	48.4	50.6	52.8	55.0	c	4 50.64	302 48 10.0 11.1	III	43.865	14 5 9.65	18 15 33.12	18 3761
16	......	......	26.0	30.5	32.1	34.6	c_5 d_3	8 21.76	303 26 10.0 10.9	V A	44.960	14 8 40.75	17 33 55.22	17 4036
17	7.	0.2	2.2	4.0	5.9	8.4	a	9 34.27	303 26 " "	III C	43.620	14 9 53.26	17 44 2.01	17 4046
18	8.6	59.7	1.7	4.1	6.2	8.5	■	10 4.04	306 24 10.7 11.5	III	46.225	14 10 22.84	14 38 36.46	14 3910
19	9.0	30.8	33.1	35.0	39.3	40.8	c_3 d_2	10 30.80	306 54 10.0 10.5	V A	42.740	14 10 49.57	14 6 28.52	13 3862
20	9.0	10.9	13.0	15.1	17.2	19.3	c	12 15.10	306 54 " "	III C	47.430	14 12 33.88	−14 14 39.37	−14 3917
21	9.0	6.1	8.2	10.5	12.6	14.8	c	15 10.44	303 40 10.2 11.5	III A	44.450	14 15 29.43	−17 20 2.43	−17 4069
22	9.2	35.2	37.4	39.5	41.9	44.1	c	15 39.62	303 40 " "	III C	44.560	14 15 58.62	17 29 41.53	17 4072
23	8.2	3.3	5.5	7.7	9.8	12.0	c	21 7.66	303 52 10.0 10.9	III	41.790	14 21 26.67	17 12 6.29	16 3867
24	8.8	32.6	34.8	36.8	39.0	41.3	c	23 36.90	302 48 10.0 11.1	III	45.060	14 23 55.98	18 15 5.92	18 3835
25	8.5	50.0	52.3	54.4	56.7	58.8	c	39 54.44	303 8 9.0 10.1	V	44.750	14 40 13.57	17 55 7.76	17 417[illegible]
26	8.9	37.1	39.2	40.9	42.9	45.2	a	44 10.86	305 22 10.0 10.6	I	44.130	14 44 29.84	15 41 11.55	15 3963
27	8.9	56.4	58.5	0.4	2.2	4.6	a	45 30.50	303 42 10.0 10.5	I C	43.845	14 45 49.62	17 27 48.53	17 4193
28	9.1	27.9	30.1	32.2	34.4	36.7	c	45 32.26	303 42 " "	III A	43.820	14 45 51.37	17 18 7.50	17 4194
29	8.7	3.2	5.4	7.5	9.8	11.9	c	46 7.56	303 58 9.0 10.0	III	42.415	14 46 26.65	17 5 48.68	16 3953
30	8.8	19.5	21.6	23.4	25.2	27.6	a	49 53.62	303 6 9.5 9.5	I	43.040	14 50 12.78	−17 57 38.04	−17 4214

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
31	8.5	6.6	8.6	10.8	13.0	15.1	c	50 10.82	305 48 10.4 11.5	III	44.225	14 50 29.77	−15 15 6.44	−15 3986
32	9.1	46.8	49.0	51.2	53.4	55.5	c	50 51.18	305 48 " "	III	48.610	14 51 10.14	15 13 42.09	15 3988
33	9.4	57.0	59.2	1.2	3.5	5.6	c	56 1.30	303 22 10.0 10.5	III	46.430	14 56 20.46	17 40 29.89	17 4238
34	8.6	42.8	44.9	47.0	49.3	51.5	c	56 47.10	303 0 9.5 9.2	III	44.950	14 57 6.29	18 3 0.09	17 4240
35	9.0	47.0	49.0	51.1	53.5	55.6	c	57 51.24	305 6 10.0 10.3	III	43.670	14 58 10.28	15 57 17.59	15 4017
36	9.5	6.7	9.2	11.2	13.5	15.6	c	0 11.24	304 28 10.0 10.2	III A	42.985	15 0 30.34	16 32 17.50	16 4002
37	9.2	27.5	29.7	31.9	34.3	36.5	c	0 31.98	304 28 " "	V C	47.350	15 0 51.09	16 40 34.60	16 400
38	8.2	41.8	43.8	45.5	47.4	49.8	a	5 15.60	304 28 10.0 10.3	I	44.190	15 5 34.71	16 35 7.16	16 4020
39	8.0	51.8	53.9	56.1	58.4	0.5	c	5 56.14	304 50 10.0 10.1	III	41.450	15 6 15.22	16 13 58.73	16 4025
40	......	28.3	30.5	32.7	34.7	36.9	c	6 32.62	305 44 10.0 10.2	V B	50.330	15 6 51.63	−15 20 19.75	−15 4050
41	8.0	0.0	2.1	4.0	6.0	8.0	e	17 34.24	304 48 10.0 10.4	V	52.460	15 17 53.37	−16 12 23.89	−16 4070
42	9.3	23.1	25.2	27.3	29.4	31.3	e	17 57.46	304 48 " "	VII C	51.390	15 18 16.60	16 19 10.40	16 4072
43	9.2	34.7	36.7	38.9	41.3	43.4	c	23 39.00	304 36 9.5 9.7	V C	47.205	15 23 58.17	16 32 30.73	16 4094
44	8.6	11.8	14.1	15.9	17.8	20.0	a	23 45.85	304 36 " "	I B	45.740	15 24 5.01	16 29 46.00	16 4095
45	6.5	8.3	10.8	12.6	14.4	16.3	e	24 42.68	304 48 9.2 9.7	VII	41.150	15 25 1.84	16 15 59.23	16 4099
46	8.5	25.0	27.0	28.9	30.8	33.2	a	27 59.00	303 56 10.0 10.1	I	42.960	15 28 18.24	17 7 25.60	16 4113
47	8.7	18.3	20.6	22.8	25.0	27.0	c	28 22.74	305 0 10.0 10.0	III	45.230	15 28 41.88	16 2 39.07	15 4141
48	8.6	7.4	9.5	11.4	13.2	15.4	a	31 41.29	304 38 10.0 10.5	I	46.990	15 32 0.47	16 24 4.93	16 4123
49	9.1	16.2	18.5	20.4	22.6	24.9	c	32 20.52	305 48 10.3 11.3	III B	40.620	15 32 39.60	15 19 17.41	15 4150
50	9.1	49.4	51.4	53.5	55.7	57.8	c	32 53.56	305 48 " "	III A	46.060	15 33 12.64	−15 11 4.42	−15 4152
51	9.2	47.0	49.0	51.1	53.4	55.5	c	34 51.20	305 22 10.0 10.5	III	45.900	15 35 10.33	−15 40 22.96	−15 4159
52	8.9	11.6	13.9	16.0	18.3	20.4	c	36 16.04	305 0 10.0 10.2	III	41.830	15 36 35.21	16 3 41.77	15 4161
53	6.	3.4	5.6	7.7	9.9	12.0	c	38 7.72	305 40 10.0 10.7	III	49.365	15 38 26.83	15 21 14.55	15 4171
54	9.3	3.5	5.6	7.8	10.0	12.3	c	39 7.84	305 40 " "	III C	49.505	15 39 26.96	15 27 38.47	15 4176
55	9.1	7.0	9.1	11.2	13.4	15.5	c	42 11.24	305 34 10.0 10.4	III C	48.355	15 42 30.38	15 33 59.98	15 4191
56	9.0	32.8	34.9	37.0	39.3	41.3	c	42 37.06	305 34 " "	V	50.580	15 42 56.19	15 26 50.13	15 4193
57	9.1	14.9	17.0	19.2	21.4	23.6	c	44 19.22	303 46 10.0 10.5	III	50.270	15 44 38.53	17 15 0.63	17 4434
58	8.7	59.4	1.5	3.7	5.9	8.1	c	45 3.72	304 20 10.0 10.9	III	47.490	15 45 22.98	16 41 51.88	16 4166
59	8.0	40.6	42.7	44.9	47.0	49.3	c	50 44.90	305 30 10.0 10.4	III	45.590	15 51 4.07	15 32 23.51	15 4217
60	9.0	48.0	50.2	52.4	54.6	56.7	c	51 52.38	305 30 " "	III A	42.585	15 52 11.55	−15 30 6.43	−15 4225
61	7.	49.9	52.0	53.9	55.6	57.9	a	54 23.75	304 46 10.0 10.8	I (A)	42.050	15 54 42.99	−16 14 17.49	−16 4196
62	9.3	25.0	27.3	29.4	31.6	33.8	c	54 29.42	304 46 " "	III C	47.265	15 54 48.67	16 22 18.93	16 4197
63	8.2	40.8	42.9	45.0	47.4	49.4	c	58 45.10	306 24 10.0 11.0	III	46.090	15 59 4.20	14 38 8.57	14 4341
64	8.6	34.5	36.4	38.2	40.0	42.4	a	0 8.03	305 50 10.0 10.2	I	47.080	16 0 27.19	15 11 50.92	15 4243
65	9.1	36.9	39.0	41.3	43.5	45.6	c	0 41.26	304 46 10.0 10.8	III	45.150	16 1 0.52	16 16 30.52	16 4218
66	9.2	30.8	32.5	36.6	38.9	41.0	b_2 c_3	1 41.00	304 46 " "	III A	40.190	16 2 0.26	16 14 51.00	16 4220
67	8.8	7.0	9.1	11.2	13.1	14.8	e	1 41.37	305 40 10.0 11.0	VII	45.600	16 2 0.55	15 22 18.62	15 4250
68	8.7	40.3	42.5	44.6	46.4	48.4	e	2 14.55	304 12 10.0 10.8	VII B	50.340	16 2 33.88	16 52 5.91	16 4222
69	8.7	23.0	25.3	27.4	29.6	31.9	c	3 27.44	304 12 " "	III C	50.470	16 3 46.77	16 55 16.08	16 4230
70	9.3	44.5	46.7	48.8	50.9	53.2	c	3 48.82	304 12 " "	V A	43.360	16 4 8.14	−16 47 51.07	−16 4234
71	9.0	16.3	18.1	20.0	22.0	24.3	a	6 49.96	305 16 10.0 10.3	I	47.865	16 7 9.19	−15 45 35.08	−15 4266
72	9.3	43.6	45.7	47.9	50.2	52.3	c	7 47.94	304 58 10.0 10.2	III	48.925	16 8 7.21	16 3 15.41	15 4271
73	8.4	57.6	59.7	1.9	4.0	6.2	c	8 1.88	304 58 " "	V B	41.670	16 8 21.16	16 8 48.64	16 4251
74	8.0	43.7	45.8	48.0	50.2	52.2	c	9 47.98	305 42 10.0 10.7	III	44.580	16 10 7.18	15 20 35.84	15 4283
75	9.0	36.4	38.5	40.7	42.9	45.0	c	12 40.70	304 52 10.0 10.5	III B	50.530	16 12 59.99	16 11 57.11	16 4265
76	8.8	34.3	36.4	38.6	40.8	43.0	c	13 38.62	304 52 " "	III B	42.090	16 13 57.91	16 14 38.76	16 4269
77	9.0	18.3	20.5	22.7	24.8	29.2	c_2 d_1	18 20.50	303 32 10.0 10.7	V	44.120	16 18 39.94	17 30 48.90	17 4562
78	8.0	4.8	6.9	8.7	10.6	13.0	a	22 38.93	303 18 10.0 10.3	I	41.060	16 22 58.40	17 45 45.99	17 4580
79	9.1	46.9	49.3	51.3	53.7	55.7	c	22 51.38	304 6 10.0 10.9	III	43.860	16 23 10.77	16 56 49.59	16 4288
80	9.0	5.8	7.9	10.1	12.3	14.6	c	24 10.14	303 16 10.3 11.3	III	43.160	16 24 29.62	−17 47 4.73	−17 4586
81	9.1	47.0	49.2	51.4	53.6	55.8	c	24 51.40	306 28 10.3 11.4	III	46.650	16 25 10.57	−14 33 48.34	−14 4437
82	9.0	5.9	7.9	9.7	11.6	14.0	a	27 39.54	305 58 10.0 10.8	I	43.010	16 27 58.76	15 4 58.91	14 4442
83	8.0	48.9	51.0	53.2	55.5	57.6	c	27 53.24	306 48 10.0 10.7	III	41.860	16 28 12.38	14 15 18.82	14 4444
84	8.3	19.8	22.0	24.0	26.3	28.3	c	30 24.08	306 36 10.0 11.3	III	45.530	16 30 43.24	14 26 7.73	14 4455
85	9.2	22.3	24.5	26.5	28.8	30.9	c	31 26.60	302 58 9.7 10.0	III C	47.580	16 31 46.14	18 10 6.25	18 4298
86	8.0	16.6	18.7	20.9	23.2	25.4	c	32 20.96	302 58 " "	III A	45.280	16 32 40.49	18 1 8.69	17 4606
87	9.0	14.4	16.5	18.3	20.2	22.5	a	34 48.26	304 52 10.0 10.9	I	44.200	16 35 7.61	16 10 36.54	16 4326
88	......	23.5	25.6	27.9	29.9	32.1	c	35 27.80	303 30 10.0 10.4	III	43.410	16 35 47.30	17 32 55.88	17 4618
89	9.1	43.8	46.0	48.3	50.4	54.7	c_2 d_1	35 46.06	304 52 10.0 11.0	V	45.310	16 36 5.42	16 10 14.87	16 4328
90	9.1	42.8	44.9	47.0	49.3	51.6	c	37 47.12	303 4 9.7 10.0	III	42.600	16 38 6.66	−17 59 12.29	−17 4624
91	9.0	34.8	36.9	38.9	40.8	43.2	a	40 8.95	303 52 10.0 10.4	I	46.760	16 40 28.42	−17 9 48.66	−17 4630
92	8.8	21.8	24.0	26.2	28.2	30.4	c	40 26.12	303 34 10.0 10.4	III A	46.685	16 40 45.61	17 24 36.67	17 4631
93	9.4	55.8	58.0	0.1	2.0	3.8	e	40 29.94	303 34 " "	VII B	43.280	16 40 49.45	17 32 10.31	17 4632
94	8.4	43.7	45.8	47.7	49.6	51.8	a	43 17.66	304 26 10.0 10.6	I	46.620	16 43 37.08	16 35 48.49	16 4353
95	6.5	21.1	23.4	25.6	27.7	29.9	c	43 25.54	305 32 10.0 10.7	III	47.130	16 43 44.85	15 29 35.56	15 4395
96	9.6	33.5	35.8	38.0	40.2	42.3	c	44 37.96	304 2 9.3 9.7	III	44.370	16 44 57.43	17 0 33.28	16 4359
97	9.0	49.3	51.4	53.6	56.0	58.1	c	45 53.68	303 32 9.4 9.7	III	46.750	16 46 13.20	17 29 48.62	17 4644
98	9.5	19.5	21.7	23.8	26.0	28.2	c	49 23.84	305 14 9.4 9.7	III B	41.380	16 49 43.21	15 52 39.45	15 4408
99	8.6	33.2	35.4	37.5	39.7	41.9	c	50 37.54	305 14 " "	III	48.780	16 50 56.90	15 47 2.95	15 4412
100	9.4	35.0	37.2	39.4	41.6	43.7	c	51 39.38	305 24 10.0 10.8	III	41.425	16 51 58.73	−15 39 22.40	−15 4417
101	8.5	50.8	53.0	55.1	57.4	59.5	c	52 55.16	305 24 " "	III	41.180	16 53 14.51	−15 39 26.63	−15 4420
102	9.3	22.5	24.7	26.9	29.1	31.2	c	53 26.88	305 24 " "	III	44.550	16 53 46.23	15 38 21.78	15 4422
103	9.3	24.1	26.1	28.3	30.6	32.7	c	58 28.36	307 (4) 10.0 10.8	III A	44.070	16 58 47.55	13 55 10.27	13 4536
104	9.3	1.3	3.3	5.5	7.8	9.8	c	59 5.54	307 (4) " "	III B	43.960	16 59 24.74	14 1 40.54	13 4540
105	8.9	14.3	16.6	18.6	21.0	23.0	c	2 18.70	304 14 9.7 10.0	III C	43.980	17 2 38.20	16 55 0.44	16 4422
106	8.6	50.8	52.9	55.0	57.2	59.5	c	2 55.08	304 14 " "	III A	40.870	17 3 14.57	−16 46 18.55	−16 4425

Reduction Elements. Zone 118.

1895.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
June 1.3....	−0.136	−0.181	−0.241	−0.136	−0.181	−0.248
1.5....			−0.254			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	53 Virginis		α Virginis		72 Virginis		73 Virginis		Mayer 575		η Ophiuchi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	305 24 10.20		310 26 10.10		315 6 9.60		302 50 10.25		301 4 9.95		305 26 10.35	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.150	5 19.35	40.855	4 16.58	43.880	5 14.44		6 6.98	42.400	4 46.19	45.245	5 40.12
II Red. to Mer......	.125	0.16	.875	0.10	.880	0.06		0.18	.385	0.20	.225	0.15
VI Inclination	.140			−0.10	.875		46.625	0.10	.435		.200	
VII Refraction	.135	1 15.9		1 3.4	.895	53.8	.620	1 23.4	.415	1 29.5	.215	1 16.4

	ξ Ophiuchi		51 Ophiuchi		ξ Serpentis	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	300 2 10.25		297 10 10.25		305 42 10.05	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.160	5 38.65	43.065	4 59.29	44.435	5 25.12
II Red. to Mer......	.155	0.21	.095	0.24	.430	0.15
VI Inclination	.135		.130		.425	
VII Refraction	.130	1 33.9	.080	1 45.8	.465	1 15.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
53 Virginis	13 6 25.46	11	−0.46	+5.34	305 28 13.8	28.2
α Ursae Minoris S. P.	13 19 31.23	6	+2.30	[+5.64]	52 18	....
α Virginis	13 19 36.97	11	−0.45	+5.33	310 29 23.3	28.2
72 Virginis	13 24 54.34	11	−0.44	+5.36	315 10 30.3	28.1
73 Virginis	13 26 20.30	10	−0.47	+5.45	302 54 54.1	28.5
Mayer 575	14 28 53.67	11	−0.47	+5.54	301 7 26.8	28.6
ε Ursae Minoris.....	16 56 46.91	7	−0.72	[+5.70]	43 16	....
η Ophiuchi	17 4 19.07	11	−0.46	+5.69	305 30 34.2	27.5
ξ Ophiuchi	17 14 40.48	11	−0.47	+5.70	300 6 15.2	26.7
51 Ophiuchi	17 24 58.45	11	−0.48	+5.70	297 13 24.0	27.3
ξ Serpentis	17 31 32.27	11	−0.46	+5.59	305 46 19.5	26.6

h		s
13.554	........*dt*........................	+5.404
	Hourly rate	+0.0707

Adopted Equator Point .... 321° 6′ 27″.74

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
13 9	29.892	86.2	85.2
14 12	29.892	85.5	85.2
15 19	29.884	84.2	83.9
16 15	29.880	83.1	82.1
17 27	29.866	81.0	79.8

Notes.
16, 25. Clouds.
24. Clouds after this.
91. Close double.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	A = α to 1900.0 302°	303°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	s	s
303	−0.466	13 0	......	......	......	+13.766	+13.729	+13.694	......
304	0.463	13 30	......	+13.925	+13.876	13.826	13.776	13.727	......
305	0.461	14 0	+14.073	14.011	13.949	13.887	13.827	13.765	......
306	0.459	14 30	+14.168	14.095	14.022	13.950	13.877	13.805	......
307	0.457	15 0	......	14.176	14.093	14.010	13.929	13.847	......
308	−0.455	15 30	......	14.252	14.160	14.070	13.979	13.889	......
		16 0	......	14.324	14.224	14.126	14.029	13.932	......
		16 30	......	14.385	14.281	14.177	14.075	13.974	+13.872
		17 0	......	+14.439	14.333	14.227	14.120	+14.015	+13.909
		17 30	......	......	+14.376	+14.268	+14.159	......	......

APPARENT RIGHT ASCENSION.	*D* = Z. D. N. to 1895.0							*R*					
	302°	303°	304°	305°	306°	307°	308°	302° 30′	303° 30′	304° 30′	305° 30′	306° 30′	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″	″
13 0	.....	.....	.....	+18.67	+18.39	+18.12	.....	84.86	81.70	78.70	75.84	73.13	70.52
13 30	.....	−19.40	−19.15	18.90	18.65	18.40	.....	84.86	81.70	78.70	75.84	73.13	70.52
14 0	−19.51	19.30	19.08	18.87	18.65	18.43	.....	84.88	81.71	78.72	75.86	73.15	70.53
14 30	−19.07	18.89	18.71	18.53	18.35	18.16	.....	84.92	81.75	78.76	75.89	73.18	70.57
15 0	...	18.22	18.07	17.93	17.78	17.63	.....	85.00	81.83	78.84	75.96	73.25	70.63
15 30	...	17.28	17.17	17.07	16.97	16.86	.....	85.11	81.94	78.94	76.07	73.35	70.73
16 0	...	16.07	16.00	15.94	15.88	15.82	.....	85.29	82.11	79.10	76.22	73.50	70.88
16 30	...	14.63	14.62	14.59	14.58	14.55	+14.54	85.43	82.24	79.23	76.35	73.62	70.99
17 0	...	−13.00	13.02	13.05	13.07	+13.10	+13.12	85.57	82.38	79.36	76.47	73.74	71.10
17 30	...	.....	−11.24	−11.31	−11.38	.....	.....	85.70	82.51	79.49	76.60	73.86	71.22

1895 JUNE 6. ZONE 119. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.7	35.2	37.4	39.5	41.7	43.9	c	14 39.54	304 52 10.0 11.0	V 47.075	13 15 5.74	−16 10 40.44	−15 3644
2	7.0	39.5	41.5	43.3	45.3	47.5	a	17 13.45	303 50 10.0 10.4	I 46.960	13 17 39.70	17 12 42.56	16 3650
3	9.1	12.7	15.0	17.0	19.2	21.3	c	17 17.04	303 50 “ “	III C 45.400	13 17 43.30	17 19 40.20	17 3839
4	9.1	18.1	20.1	21.9	23.8	26.2	a	28 51.91	304 46 10.0 9.8	I A 45.010	13 29 18.14	16 14 0.36	15 3696
5	9.3	5.3	7.4	9.2	11.3	13.5	a	29 39.24	304 46 “ “	I B 46.790	13 30 5.47	16 19 54.70	16 3702
6	8.5	37.0	39.2	41.4	43.7	45.8	c	29 41.42	304 46 “ “	III C 41.970	13 30 7.66	16 24 41.85	16 3704
7	9.1	48.4	50.5	52.6	55.0	57.0	c	32 52.70	305 10 10.0 9.9	III 49.810	13 33 18.92	15 51 43.54	15 3709
8	7.5	4.7	6.8	8.9	11.2	13.3	c	34 8.98	305 10 “ “	III B 45.440	13 34 35.20	15 56 20.46	15 3715
9	9.0	52.6	54.8	56.9	59.3	1.3	c	35 56.98	304 46 10.0 10.3	III 42.370	13 36 23.22	16 18 6.69	16 3724
10	9.1	7.5	9.5	11.3	13.2	15.5	a	37 41.25	305 8 10.0 10.4	I (B) 41.290	13 38 7.48	−15 59 37.60	−15 3727
11	9.1	17.6	19.6	21.6	23.8	26.0	c	38 21.72	305 8 “ “	III B 41.045	13 38 47.95	−15 59 43.92	−15 3729
12	9.1	36.8	39.0	41.0	43.1	45.1	c	38 41.00	305 8 “ “	V 43.720	13 39 7.23	15 55 40.58	15 3732
13	8.9	26.7	28.9	31.2	33.3	35.6	c	39 31.14	304 20 10.0 10.4	III 40.990	13 39 57.41	16 44 33.69	16 3738
14	8.0	11.4	13.5	15.6	17.5	19.4	e	39 45.83	305 48 10.0 9.9	VII 42.905	13 40 12.03	15 15 55.72	15 3735
15	9.0	55.2	57.3	59.5	1.7	3.9	c	42 59.52	304 32 10.3 10.9	III A 42.150	13 43 25.79	16 28 54.47	16 3747
16	9.1	7.0	9.1	11.4	13.6	15.7	c	44 11.36	304 32 “ “	III 43.050	13 44 37.63	16 31 52.37	16 3751
17	8.7	55.9	58.0	0.1	2.2	4.4	c	48 0.12	305 46 10.0 10.2	III 43.280	13 48 26.33	15 17 44.45	15 3762
18	8.8	15.0	17.1	19.3	21.6	23.8	c	5 19.36	304 30 10.0 9.6	III 45.160	14 5 45.67	16 33 8.62	16 3822
19	9.2	53.8	55.8	58.1	0.3	2.5	c	6 58.10	304 46 10.0 9.5	III 42.360	14 7 24.40	16 18 1.30	16 3827
20	8.5	0.0	2.2	4.4	6.6	8.7	c	11 4.38	305 6 10.0 10.2	III 40.760	14 11 30.67	−15 58 29.84	−15 3839
21	9.2	8.5	10.6	12.8	15.0	17.3	c	13 12.84	305 46 10.0 9.9	III 44.740	14 13 39.08	−15 17 11.34	−15 3846
22	9.0	47.5	49.7	51.9	54.0	56.3	c	13 51.88	304 42 10.0 10.0	III 43.860	14 14 18.20	16 21 30.93	16 3840
23	8.7	28.9	31.0	33.2	35.4	37.5	c	22 33.20	305 12 9.8 9.1	III 43.680	14 22 59.51	15 51 31.57	15 3878
24	8.9	52.3	54.4	56.7	58.9	0.9	c	24 56.64	304 40 10.0 9.0	III 48.660	14 25 22.99	16 21 56.85	16 3882
25	9.0	12.5	14.6	16.8	19.0	21.2	c	25 16.82	304 40 “ “	V C 46.860	14 25 43.18	16 28 58.67	16 3884
26	8.9	36.8	39.0	43.2	44.9	47.5	c_4 d_3	25 34.66	304 40 “ “	VI 50.750	14 26 1.01	16 21 18.53	16 3886
27	9.0	49.4	51.7	53.8	56.0	58.0	c	26 53.78	305 4 10.0 9.8	III B 48.080	14 27 20.11	16 1 19.29	15 3894
28	8.9	34.0	36.2	38.5	40.7	42.9	c	27 38.46	305 4 “ “	III A 40.870	14 28 4.78	15 57 8.84	15 3897
29	9.1	7.0	9.5	11.6	13.7	16.0	c	29 11.56	305 4 “ “	III 38.925	14 29 37.89	16 1 1.16	15 3903
30	9.2	39.2	41.3	43.3	45.6	47.8	(c)	30 43.44	305 4 “ “	III 41.850	14 31 9.77	−16 0 4.65	−15 3906
31	8.3	36.5	38.5	40.5	42.3	44.6	a	34 10.30	305 16 10.0 10.2	I 47.635	14 34 36.62	−15 46 10.51	−15 3922
32	7.9	0.0	2.2	4.0	5.9	8.1	a	34 33.86	305 16 “ “	I 46.140	14 35 0.18	15 46 39.07	15 3924
33	9.0	1.1	3.3	5.5	7.6	9.8	c	35 5.46	305 38 10.0 9.3	III 40.610	14 35 31.76	15 26 26.09	15 3927
34	9.3	23.9	26.0	28.2	30.4	32.6	c	36 28.22	305 16 10.0 9.5	III 46.510	14 36 54.54	15 46 33.38	15 3936
35	8.2	25.0	27.3	29.4	31.7	33.8	c	38 29.44	304 42 10.0 10.2	III C 46.410	14 38 55.82	16 27 2.21	16 3929
36	8.5	32.1	34.3	36.5	38.6	40.6	c	39 36.42	304 42 “ “	III 50.540	14 40 2.79	16 19 16.48	16 3934
37	8.9	55.1	57.2	59.3	1.6	3.7	c	39 59.38	304 42 “ “	III C 47.840	14 40 25.76	16 26 34.37	16 3936
38	9.1	17.5	19.6	21.4	23.0	25.4	a	44 51.30	304 34 10.0 10.1	I 50.460	14 45 17.69	16 27 15.56	16 3947
39	9.1	43.4	45.4	47.3	49.3	51.7	a	45 17.36	304 34 “ “	I C 48.570	14 45 43.76	16 34 18.07	16 3949^{n}
40	9.1	13.0	15.2	17.4	19.6	21.6	c	45 17.36	304 34 “ “	III (C) 47.145	14 45 43.76	−16 34 46.80	−16 3949^{s}
41	9.2	44.4	46.6	48.6	51.0	53.0	c	46 48.72	304 36 7.3 6.5	III A 46.930	14 47 15.11	−16 23 42.04	−16 3955
42	8.9	38.2	40.4	42.5	44.8	46.9	c	47 42.56	304 36 “ “	III B 43.990	14 48 8.96	16 31 6.88	16 3958
43	8.5	2.1	4.3	6.4	8.7	10.7	c	51 6.44	305 0 10.0 10.2	III B 43.450	14 51 32.81	16 6 41.97	15 3990
44	8.7	33.5	35.6	37.8	39.8	42.1	c	51 37.76	305 0 “ “	III A 42.540	14 52 4.12	16 0 30.63	15 3993
45	8.9	9.0	11.1	13.4	15.6	17.8	c	52 13.38	305 0 “ “	III B 48.290	14 52 39.75	16 5 8.76	15 3997
46	8.8	45.0	47.0	49.2	51.5	53.7	c	52 49.28	305 0 “ “	III 45.250	14 53 15.65	16 2 53.68	15 4001
47	9.4	14.7	16.9	19.1	21.2	23.4	c	54 19.06	305 0 “ “	III C 48.040	14 54 45.44	16 8 25.92	15 4007
48	7.7	43.3	45.5	47.7	49.9	52.0	c	0 47.68	305 0 10.0 9.2	III B 46.050	15 1 14.06	16 5 49.93	15 4028
49	9.2	23.5	25.7	27.9	30.2	32.2	c	1 27.90	305 0 “ “	III A 40.470	15 1 54.28	16 1 8.16	15 4032
50	9.1	44.5	46.4	48.4	50.3	52.6	a	4 18.29	305 8 10.0 9.8	I B 42.940	15 4 44.67	−15 58 45.22	−15 4041
51	8.9	14.2	16.2	18.4	20.6	22.7	c	4 18.42	305 8 “ “	III A 38.580	15 4 44.79	−15 53 42.99	−15 4042
52	9.0	1.9	3.9	6.0	8.3	10.5	c	5 6.12	305 8 “ “	III A 37.840	15 5 32.49	15 53 56.95	15 4044
53	8.5	14.3	16.5	18.7	20.9	22.9	c	6 18.66	305 8 “ “	III C 42.830	15 6 45.05	16 2 2.41	15 4048
54	8.6	21.4	23.3	25.7	27.9	30.0	c	8 25.66	305 24 10.0 9.1	III 48.260	15 8 52.02	−15 37 51.01	−15 4059

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
55	9.0	28.4	30.5	32.8	34.9	37.0	c	10 32.72	304 54 10.0 10.0	III 45.860	15 10 59.12	−16 8 37.43	−15 4068
56	7.7	55.2	57.3	59.6	1.7	3.8	c	14 59.52	305 52 10.0 9.7	III 43.580	15 15 25.85	15 11 17.35	15 4083
57	9.0	32.6	34.7	36.9	39.0	41.0	c	16 36.84	304 30 10.0 9.2	III 47.710	15 17 3.29	16 32 1.70	16 4067
58	8.9	50.2	52.2	54.3	56.1	58.5	a	18 24.21	304 22 9.9 8.5	I A 42.440	15 18 50.67	16 38 26.00	16 4076^{1}
59	8.9	20.2	22.3	24.5	26.7	28.8	c	18 24.50	304 22 " "	III A 44.245	15 18 50.96	16 37 53.08	16 4076^{2}
60	8.9	16.2	18.4	20.5	22.8	24.9	c	19 20.56	304 22 " "	III B 43.915	15 19 47.03	−16 44 27.81	−16 4079
61	9.3	54.2	56.2	58.1	0.0	2.2	a	20 28.09	304 22 " "	I 45.950	15 20 54.56	−16 40 33.59	−16 4085
62	9.1	25.3	27.6	29.8	31.9	34.1	c	20 29.74	304 22 " "	III B 43.665	15 20 56.21	16 44 32.26	16 4086
63	8.8	58.9	0.9	3.0	5.3	7.4	c	21 3.10	305 42 10.0 9.2	V B 39.450	15 21 29.46	15 25 50.33	15 4107
64	8.4	31.7	33.9	36.0	38.2	40.3	c	22 36.02	305 42 " "	III 43.480	15 23 2.37	15 21 17.73	15 4118
65	8.6	6.5	8.6	10.8	13.1	15.2	c	24 10.84	305 42 10.0 9.0	III 45.260	15 24 37.20	15 20 43.18	15 4130
66	8.8	29.0	31.1	33.2	35.5	37.7	c	25 33.30	(304 28) 10.0 8.7	III C 46.280	15 25 59.78	16 40 53.03	16 4104
67	6.8	45.3	47.5	49.6	51.9	54.1	c	26 49.68	(304 28) " "	III A 47.470	15 27 16.14	16 30 48.23	16 4110
68	8.9	47.2	49.3	51.5	53.7	55.8	c	27 51.50	(304 28) " "	III B 41.000	15 28 17.98	16 39 20.77	16 4112
69	8.6	48.0	50.0	52.2	54.4	56.6	c	29 52.24	305 24 10.0 8.8	III 46.510	15 30 18.63	15 38 18.38	15 4143
70	8.8	46.9	49.0	51.1	53.3	55.5	c	30 51.16	305 52 10.0 9.0	III 44.440	15 31 17.51	−15 10 56.47	−15 4144
71	8.8	30.2	32.4	34.4	36.8	39.0	c	34 34.56	304 38 10.0 8.5	III 41.735	15 35 1.03	−16 25 50.95	−16 4135
72	8.9	32.3	34.3	36.6	38.8	41.0	c	35 36.60	305 48 10.0 9.1	III 46.560	15 36 2.96	15 14 14.42	15 4161
73	9.0	53.9	56.1	58.3	0.4	2.7	c	35 58.28	305 48 " "	V 45.090	15 36 24.64	15 14 43.86	15 4163
74	8.1	46.0	48.0	50.2	52.5	54.6	c	37 50.26	304 36 10.0 9.2	III C 45.270	15 38 16.74	16 33 8.03	16 4151
75	9.1	47.3	49.6	51.6	54.0	56.0	c	38 51.70	304 36 " "	III A 43.080	15 39 18.17	16 24 8.16	16 4154
76	8.9	14.1	16.4	18.6	20.7	23.0	c	40 18.56	305 12 10.0 8.8	III 44.530	15 40 44.98	15 50 53.71	15 4182
77	9.3	7.2	9.4	11.5	13.9	16.0	c	41 11.60	305 12 " "	III 41.500	15 41 38.02	15 51 51.59	15 4186
78	9.0	0.0	2.0	4.2	6.4	8.5	c	42 4.22	304 46 9.4 7.8	III 42.965	15 42 30.68	16 17 25.24	16 4160
79	9.2	47.1	49.3	51.4	53.7	55.8	c	43 51.46	305 26 10.0 8.7	III B 45.060	15 44 17.87	15 39 55.10	15 4197
80	9.3	39.3	41.6	43.8	46.0	48.2	c	44 43.78	305 26 " "	III B 41.470	15 45 10.19	−15 41 3.73	−15 4200
81	9.3	36.3	38.4	40.4	42.6	44.7	c	45 40.48	305 26 " "	III 43.995	15 46 6.89	−15 37 1.68	−15 4203
82	8.9	48.3	50.4	52.5	54.6	57.0	c	48 52.56	305 4 10.0 8.9	III B 38.750	15 49 19.02	16 3 55.52	15 4211
83	9.1	38.8	40.8	42.6	44.6	46.8	a	50 12.64	304 38 10.0 9.1	I B 43.620	15 50 39.15	16 28 21.08	16 4178
84	8.8	25.2	27.3	29.6	31.8	34.0	c	50 29.58	304 38 " "	III A 41.820	15 50 56.07	16 22 28.58	16 4179
85	9.0	57.7	59.9	1.8	3.9	5.7	e	50 31.97	304 38 " "	VII C 42.520	15 50 58.48	16 31 58.85	16 4180
86	8.8	28.9	31.0	33.0	35.5	37.6	c	51 33.20	304 38 " "	V C 44.650	15 51 59.71	16 31 16.68	16 4183
87	8.6	2.4	4.6	6.8	8.7	11.0	c	53 6.70	305 10 10.0 8.7	III B 44.230	15 53 33.16	15 56 8.81	15 4228
88	9.1	5.5	7.7	9.8	12.1	14.2	c	54 9.86	305 10 " "	III 45.130	15 54 36.31	15 52 37.92	15 4229
89	9.1	11.0	13.2	15.4	17.6	19.8	c	55 15.40	305 48 10.0 8.9	III C 49.070	15 55 41.80	15 19 46.29	15 4232
90	9.3	26.9	29.0	31.1	33.3	35.5	c	56 31.16	305 48 " "	III A 44.350	15 56 57.55	−15 11 34.87	−15 4236
91	8.6	21.4	23.6	25.8	28.0	30.2	c	57 25.80	304 56 10.0 9.0	III 42.390	15 57 52.28	−16 7 29.97	−15 4240
92	9.0	30.4	32.5	34.7	36.9	39.0	c	58 34.70	304 26 10.0 8.5	III 45.420	15 59 1.23	16 36 33.17	16 4209
93	8.7	41.3	43.5	45.7	47.9	50.0	c	0 45.68	305 12 9.6 8.1	III B 49.070	16 1 12.14	15 52 33.85	15 4246
94	9.0	39.4	41.5	43.6	46.1	48.1	c	1 43.74	305 12 " "	III 45.330	16 2 10.20	15 50 32.02	15 4251
95	9.0	30.0	32.3	34.3	36.7	38.7	c	2 34.40	305 12 " "	III 48.180	16 3 0.86	15 49 37.04	15 4252
96	9.3	54.6	56.9	0.9	2.6	5.2	$c_4 d_3$	2 52.43	305 12 " "	VI C 51.260	16 3 18.90	15 55 5.70	15 4255
97	8.9	48.0	50.2	52.5	54.6	56.6	c	5 52.38	304 30 10.0 8.1	III 44.700	16 6 18.91	16 32 44.60	16 4242
98	9.2	13.9	16.0	18.2	20.4	22.5	c	7 18.20	305 36 10.0 8.5	III B 41.090	16 7 44.63	15 31 3.29	15 4269
99	9.4	45.9	47.9	49.6	51.5	53.7	a	8 19.50	305 36 " "	III 43.610	16 8 45.93	15 27 1.29	15 4274
100	9.3	18.8	20.9	23.0	25.3	27.4	c	8 23.08	305 36 " "	V B 46.685	16 8 49.51	−15 29 17.09	−15 4275
101	8.8	52.6	54.6	56.4	58.5	0.7	a	9 26.34	305 36 " "	III B 42.960	16 9 52.78	−15 30 26.66	−15 4279
102	8.5	41.8	44.0	46.2	48.5	50.6	c	9 46.22	305 24 10.0 8.9	V 46.445	16 10 12.67	15 38 8.09	15 4284
103	9.0	27.5	29.8	32.0	34.1	36.3	c	10 31.94	304 46 10.0 8.3	V 46.190	16 10 58.45	16 16 14.88	16 4258
104	9.3	46.0	48.2	50.3	52.6	54.7	c	11 50.36	305 44 10.4 9.6	V 44.960	16 12 16.78	15 18 34.39	15 4293
105	8.6	44.3	46.4	48.2	50.0	52.4	a	13 18.02	305 44 " "	III 46.080	16 13 44.44	15 18 11.07	15 4300
106	9.4	20.7	22.8	24.9	27.2	29.3	c	13 24.98	305 44 " "	V 45.875	16 13 51.40	15 18 16.32	15 4301
107	8.9	3.4	5.4	7.8	10.0	12.2	c	19 7.76	305 8 10.0 8.4	V B 45.605	16 19 34.25	15 57 35.57	15 4320
108	8.9	51.9	54.3	56.2	58.2	0.0	e	19 26.39	305 8 " "	V (A) 44.940	16 19 52.87	15 51 19.50	15 4321
109	8.0	2.8	4.9	7.0	9.2	11.3	c	22 7.04	305 8 " "	V B 40.225	16 22 33.54	15 59 17.77	15 4324
110	9.5	20.3	22.6	24.7	27.1	29.3	c	23 24.80	305 8 " "	III B 50.035	16 23 51.30	−15 56 7.52	−15 4327
111	6.	54.1	56.1	58.3	0.5	2.7	c	24 58.34	304 40 10.0 8.1	III 41.420	16 25 24.89	−16 23 40.56	−16 4298
112	8.4	25.2	27.3	29.5	31.6	33.8	c	26 29.48	305 14 10.0 9.0	III A 41.960	16 26 55.96	15 46 12.18	15 4335
113	8.9	7.6	9.7	11.9	14.0	16.2	c	29 11.88	305 6 10.0 9.0	III C 43.010	16 29 38.40	16 3 33.09	15 4346
114	9.3	14.1	16.3	18.7	21.0	23.0	c	30 18.62	305 6 " "	III A 39.660	16 30 45.12	15 54 55.38	15 4350
115	9.8	25.0	27.3	29.4	31.4	33.0	e	30 59.55	305 38 10.0 9.2	VII 45.240	16 31 26.00	15 24 24.29	15 4354
116	8.3	33.3	35.5	37.7	39.9	42.0	c	33 37.68	304 38 10.0 8.2	III 43.680	16 34 4.24	16 24 54.24	16 4325
117	9.0	13.9	16.0	18.2	20.4	22.5	c	39 18.20	304 46 10.0 8.6	V 46.910	16 39 44.75	16 15 50.99	16 4343
118	9.2	30.9	32.7	34.7	36.6	38.9	a	41 4.54	305 34 10.0 8.6	I B 49.490	16 41 31.01	15 30 8.73	15 4389
119	9.3	11.7	14.0	16.0	18.1	20.4	c	41 16.04	305 34 " "	III 48.200	16 41 42.51	15 27 21.87	15 4390
120	9.6	.....	57.5	59.6	1.6	3.3	e	41 29.79	305 34 " "	VII B 43.100	16 41 56.27	−15 32 15.84	−15 4391
121	9.5	0.7	3.0	5.1	7.5	9.5	c	46 5.16	305 (24) 10.0 8.9	III B 41.070	16 46 31.66	−15 42 50.62	−15 4401
122	9.5	37.1	39.6	41.7	43.8	45.9	c	46 41.62	305 (24) " "	VI A 53.755	16 47 8.10	15 32 20.47	15 4404
123	......	19.0	21.3	23.3	25.2	27.2	e	47 53.41	304 48 10.0 8.9	VII B 54.550	16 48 19.97	16 14 35.92	16 4366
124	9.4	2.4	4.6	6.7	8.9	11.0	c	52 6.72	303 44 10.0 9.3	V 43.940	16 52 33.39	17 18 46.31	17 4672
125	8.8	51.6	53.7	55.9	58.0	0.3	c	53 55.90	304 32 10.0 9.5	III 47.160	16 54 22.49	16 29 39.92	16 4389
126	9.0	49.3	51.3	53.3	55.5	57.7	c	57 53.42	305 0 10.0 9.4	III 42.540	16 58 19.97	16 3 5.82	15 4439
127	9.4	38.1	40.2	42.0	43.9	46.2	a	0 11.84	305 44 10.0 9.7	I 44.990	17 0 38.31	15 18 14.15	15 4449
128	9.1	41.0	43.3	45.4	47.7	49.9	c	0 45.46	304 28 10.0 9.5	III 42.840	17 1 12.07	16 35 0.62	16 4417
129	9.6	30.4	32.8	34.8	36.8	39.0	c	1 34.76	305 4 10.0 10.0	III 47.255	17 2 1.30	−15 57 33.50	−15 4455

Reduction Elements. Zone 119.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
June 6.3....	—0.085	—0.140	—0.254	—0.056	—0.102	—0.247
6.5....	—0.026	—0.063	—0.240			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		53 Virginis		γ Hydrae		72 Virginis		73 Virginis		24 Scorpii		20 Ophiuchi	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		305 24 10.60		298 26 10.25		315 6 10.15		302 52 10.00		303 30 9.10		310 26 9.60	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	44.230	5 23.23	41.925	4 38.31	43.900	5 17.00		4 11.73	43.720	5 13.35	44.295	5 24.36
II	Red. to Mer......	.300	0.16	.930	0.22	.950	0.06		0.18	.725	0.17	.350	0.10
VI	Inclination	.400		42.050		44.100		40.600	—1.68	.910		.460	
VII	Refraction.......	.430	1 18.5	.085	1 43.0	.110	55.8	.625	1 26.6	.945	1 26.0	.490	1 6.9

		24 Ophiuchi		η Ophiuchi	
		° ′ ″		° ′ ″	
CIRCLE READING.		298 4 9.70		305 26 9.75	
		r	′ ″	r	′ ″
I	Microm. Eq......	42.700	4 53.96	45.485	5 47.19
II	Red. to Mer......	.760	0.23	.525	0.15
VI	Inclination	.885		.670	
VII	Refraction.......	.910	1 46.7	.680	1 20.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
53 Virginis	13 6 18.01	11	—0.33	+12.62	305 28 15.5	29.8
γ Hydrae	13 13 2.50	11	—0.35	+12.73	298 29 5.8	29.7
α Ursae Minoris S. P.	13 19 34.98	4	—3.53	[+12.46]	52 18	....
72 Virginis	13 24 46.84	11	—0.30	+12.69	315 10 31.4	28.9
73 Virginis	13 26 12.84	11	—0.34	+12.75	302 54 53.6	27.9
24 Scorpii	16 35 20.64	11	—0.33	+12.68	303 33 56.6	30.1
20 Ophiuchi	16 43 51.99	11	—0.32	+12.73	310 30 27.2	30.1
24 Ophiuchi	16 50 18.75	11	—0.35	+12.78	298 7 17.2	30.3
ε Ursae Minoris.....	16 56 38.82	8	+0.29	[+12.68]	43 16	....
η Ophiuchi	17 4 12.00	11	—0.33	+12.70	305 30 36.9	30.0

h s
13.292..........*dt*...................... +12.698
Hourly rate .... + 0.0068
° ′ ″
Adopted Equator Point 321 6 29.60

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
13 3	29.936	70.4	68.3
14 8	29.965	67.8	65.4
15 9	29.992	65.8	63.2
16 4	30.005	63.4	60.6
17 6	30.011	61.6	58.3

Notes.

41, 42. Microscopes at 9re.

57. Suspected very close double.

η Ophiuchi. Seeing quite steady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	A = α to 1900.0				D = Z. D. N. to 1895.0			
			303°	304°	305°	306°	303°	304°	305°	306°
°	s	h m	s	s	s	s	″	″	″	″
303	—0.335	13 0	+13.875	+13.839	+13.803	......	+19.14	+18.85	+18.55	.....
304	0.333	13 30	13.954	13.903	13.853	+13.804	19.33	19.06	18.80	+18.53
305	0.329	14 0	......	13.967	13.905	13.843	....	18.98	18.74	18.50
306	—0.327	14 30	......	14.027	13.956	13.883	....	18.60	18.39	18.19
		15 0	......	14.085	14.003	13.921	....	17.94	17.78	17.60
		15 30	......	14.140	14.049	13.959	....	17.02	16.89	16.75
		16 0	......	14.188	14.091	13.994	....	15.82	15.74	15.64
		16 30	14.336	14.232	14.130	14.027	14.43	14.38	14.33	14.29
		17 0	+14.375	14.269	14.163	14.057	+12.74	12.74	12.73	12.73
		17 30	......	+14.297	+14.189	+14.083	....	+10.91	+10.96	+10.99

APPARENT RIGHT ASCENSION.	*R*			
	303° 30′	304°	305°	306°
h m	″	″	″	″
13 0	84.55	82.98	79.95	77.07
13 30	84.80	83.23	80.19	77.30
14 0	85.06	83.48	80.43	77.54
14 30	85.27	83.70	80.63	77.73
15 0	85.51	83.93	80.85	77.95
15 30	85.74	84.16	81.08	78.16
16 0	86.00	84.41	81.32	78.40
16 30	86.22	84.63	81.53	78.60
17 0	86.44	84.84	81.73	78.80

1895 JUNE 7. ZONE 120. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	10+	37.9	39.9	42.0	44.6	46.3	c	29 42.14	306 10 10.0 12.2	VII C 52.640	13 30 8.06	[−14 57 14.72]	−14 3748
2	9.0	44.2	46.2	48.4	50.8	52.8	c	33 48.48	305 6 10.0 11.6	III 45.290	13 34 14.45	15 57 9.82	15 3712
3	7.8	5.0	7.0	9.2	11.4	13.5	c	34 9.22	305 6 " "	V 48.000	13 34 35.19	15 56 19.10	15 3715
4	8.9	9.0	11.0	13.2	15.4	17.5	c	12 13.22	306 36 10.0 12.1	V 45.480	14 12 39.15	14 26 55.64	14 3918
5	9.0	15.4	17.4	19.7	21.8	24.1	c	13 19.68	306 14 10.0 12.2	III A 42.730	14 13 45.64	14 46 32.35	14 3922
6	9.3	22.2	24.3	26.5	28.8	30.8	c	14 26.52	306 14 " "	III C 44.810	14 14 52.49	14 55 33.71	14 3926
7	8.9	17.4	19.6	21.8	24.1	26.0	c	21 21.78	306 12 10.0 11.5	III 44.840	14 21 47.75	14 51 5.84	14 3958
8	8.2	13.6	15.9	18.0	20.3	22.3	c	23 18.02	306 12 " "	III C 47.515	14 23 44.00	14 56 40.19	14 3964
9	8.0	15.0	17.3	19.4	21.6	23.9	c	24 19.44	306 12 " "	III A 43.400	14 24 45.41	14 48 17.39	14 3968
10	8.5	18.4	20.5	22.6	24.7	26.8	c	25 22.60	305 52 10.0 11.5	III 45.000	14 25 48.60	−15 11 2.67	−14 3970
11	9.0	22.8	25.0	27.2	29.3	31.5	c	26 27.16	306 6 10.0 11.5	III 43.270	14 26 53.14	−14 57 35.00	−14 3973
12	9.1	29.8	31.9	34.0	36.1	38.3	c	27 34.02	306 30 10.5 12.5	III 42.425	14 27 59.98	14 33 49.17	14 3978
13	9.5	26.9	29.0	31.1	33.4	35.4	c	28 31.16	306 42 10.0 12.1	V 42.835	14 28 57.10	14 21 42.35	14 3983
14	9.3	9.8	11.8	16.0	17.5	20.3	$c_4\ d_3$	29 7.54	306 54 9.3 11.0	VI (A) 45.755	14 29 33.46	14 5 32.05	13 3927
15	9.5	18.6	20.7	23.0	25.0	27.1	c	33 22.88	306 54 " "	III C 48.120	14 33 48.84	14 14 24.93	14 4002
16	9.1	9.4	11.5	13.7	16.0	18.0	c	34 13.72	306 12 10.0 11.4	III 47.240	14 34 39.71	14 50 16.71	14 4003
17	8.9	53.8	56.0	58.2	0.4	2.5	c	34 58.18	306 12 " "	V B 47.570	14 35 24.18	14 53 24.97	14 4006
18	9.2	30.1	32.4	34.4	36.6	38.7	c	35 34.44	307 2 10.0 12.3	V 41.550	14 36 0.38	14 2 4.32	13 3949
19	8.9	50.4	52.7	54.9	57.0	59.0	c	39 54.80	306 28 10.0 12.5	III 47.500	14 40 20.78	14 34 9.01	14 4022
20	9.3	34.0	36.3	38.4	40.5	42.6	c	40 38.36	306 28 " "	III B 41.990	14 41 4.35	−14 39 7.86	−14 4027
21	9.0	54.7	56.7	58.5	0.4	2.7	a	42 28.28	306 12 10.0 12.0	I A 42.275	14 42 54.28	−14 48 32.50	−14 4031
22	9.4	45.0	46.9	48.9	50.7	53.0	a	43 18.59	306 12 " "	I 48.460	14 43 44.60	14 49 49.14	14 4035
23	9.3	16.1	18.3	20.5	22.6	24.7	c	43 20.44	306 12 " "	III C 50.570	14 43 46.45	14 55 36.32	14 4036
24	.....	0.5	2.7	4.8	7.1	9.2	c	44 4.86	306 12 " "	III C 46.840	14 44 30.88	14 56 47.69	14 4038
25	8.0	19.0	21.3	23.3	27.5	29.2	$c_3\ d_2$	44 19.05	306 12 " "	VI (B) 40.535	14 44 45.06	14 55 37.99	14 4040
26	8.1	48.2	50.4	52.4	54.7	56.9	c	45 52.52	306 12 " "	III A 40.410	14 46 18.53	14 49 9.07	14 4052
27	8.5	29.8	31.9	34.0	36.4	38.5	c	46 34.12	306 12 " "	III C 41.180	14 47 0.14	14 58 35.64	14 4055
28	9.7	38.0	39.6	42.0	43.6	45.7	a	49 11.47	306 12 9.0 11.5	III B 47.025	14 49 37.49	14 53 30.65	14 4067
29	8.6	30.7	32.8	34.7	37.0	39.1	c	49 34.86	306 12 " "	III C 49.170	14 50 0.88	14 56 2.26	14 4069
30	9.5	29.4	31.6	33.6	35.8	37.9	c	5 33.66	306 48 10.0 11.7	III C 46.325	[15 5 59.66]	−14 20 50.24	−14 4139
31	8.6	21.1	23.2	25.3	27.3	29.6	c	6 25.30	306 48 " "	III A 43.875	15 6 51.28	−14 11 55.49	−14 4145
32	8.3	39.3	41.4	43.5	45.7	48.0	c	6 43.58	306 48 " "	V B 41.965	15 7 9.58	14 19 2.24	14 4147
33	9.0	3.6	5.6	7.7	9.8	12.1	c	9 7.76	306 20 10.0 11.3	III B 42.515	15 9 33.79	14 46 50.85	14 4155
34	9.4	26.0	28.1	30.2	32.3	34.5	c	9 30.22	306 20 " "	V A 39.420	15 9 56.24	14 41 22.99	14 4157
35	9.2	0.7	3.0	5.2	7.3	9.5	c	10 5.14	306 20 " "	V A 43.840	15 10 31.16	14 39 58.01	14 4161
36	9.4	38.6	40.8	42.8	45.0	47.2	c	11 42.88	306 12 9.5 11.0	III B 44.380	15 12 8.92	14 54 15.07	14 4167
37	9.1	54.6	56.7	58.8	1.0	3.1	c	11 58.84	306 12 " "	V A 43.940	15 12 24.87	14 47 56.28	14 4168
38	8.8	46.2	48.5	50.6	52.8	54.9	c	13 50.60	306 2 10.0 11.4	III 49.900	15 14 16.65	14 59 15.22	14 4175
39	8.0	51.9	54.1	56.3	58.6	0.7	c	14 56.32	306 2 " "	III 45.310	15 15 22.37	15 0 42.98	14 4182
40	8.2	38.6	39.9	44.3	46.4	48.6	$b_2\ c_3$	15 48.56	306 18 10.0 11.2	III B 44.920	15 16 14.60	−14 48 2.85	−14 4184
41	9.1	54.9	57.0	59.0	1.4	3.5	c	15 59.16	306 18 " "	V A 39.450	15 16 25.19	−14 43 20.64	−14 4185
42	7.8	56.8	58.9	1.0	3.2	5.4	c	17 1.06	306 18 " "	III B 49.430	15 17 27.10	14 46 35.97	14 4188
43	9.4	17.2	19.5	21.5	23.8	26.1	c	17 21.62	306 18 " "	V B 43.630	15 17 47.66	14 48 28.69	14 4190
44	9.1	0.0	2.1	4.2	6.5	8.6	c	18 4.28	306 4 10.0 11.2	V B 43.980	15 18 30.34	15 2 22.40	14 4193
45	8.9	31.3	33.5	35.6	37.8	40.0	c	19 35.64	306 4 " "	III C 44.010	15 20 1.71	15 5 32.72	14 4199
46	9.1	3.0	5.3	7.3	9.6	11.6	c	20 7.36	306 4 " "	III 47.400	15 20 33.42	14 58 1.34	14 4200
47	9.3	36.8	39.0	41.0	43.2	45.3	c	21 41.06	306 4 " "	III C 48.900	15 22 7.13	15 3 58.24	14 4207
48	9.3	32.0	33.9	36.3	58.5	40.7	c	22 36.28	306 4 " "	III A 44.250	15 23 2.34	14 55 45.66	14 4212
49	9.4	46.9	49.0	51.2	53.4	55.6	c	24 51.22	306 50 10.0 11.6	III 43.270	15 25 17.22	14 13 16.93	14 4219
50	9.0	36.8	38.9	41.0	43.2	45.3	c	27 41.04	306 34 10.0 11.1	III C 45.355	15 28 7.07	−14 35 3.16	−14 4229

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
51	8.5	59.9	2.1	4.3	6.4	8.6	c	28 4.26	306 34 10.0 11.1	III B 45.210	15 28 30.29	−14 31 52.85	−14 4232
52	...	25.5	27.7	29.8	31.9	34.0	c	29 29.78	306 34 " "	III 49.210	15 29 55.80	14 27 22.47	14 4237
53	9.1	59.2	1.1	2.8	4.7	7.0	a	31 32.59	306 34 " "	I A 48.430	15 31 58.61	14 24 19.75	14 4245
54	8.3	54.9	57.3	59.2	1.4	3.6	c	31 59.28	306 52 10.0 11.4	III B 50.770	15 32 25.28	14 12 4.10	14 4247
55	8.3	24.1	26.2	28.5	30.7	32.8	c	32 28.46	306 52 " "	V 43.485	15 32 54.46	14 11 11.81	14 4250
56	7.9	18.0	20.1	22.3	24.5	26.7	c	37 22.32	306 16 10.0 11.8	III A 45.285	15 37 48.37	14 43 20.39	14 4266
57	9.0	52.5	54.6	56.6	58.7	0.9	c	38 56.66	306 16 " "	III C 49.780	15 39 22.73	14 51 35.19	14 4270
58	9.5	58.3	0.4	2.6	4.3	6.7	a	41 32.08	306 48 10.0 11.5	I B 41.405	15 41 58.12	14 18 59.20	14 4278
59	9.6	31.6	33.8	36.0	38.1	39.9	c	41 35.88	306 48 " "	III B 44.000	15 42 1.92	14 18 11.07	14 4279
60	8.9	28.9	30.9	33.0	35.1	37.2	c	43 33.02	306 48 " "	III 46.760	15 43 59.04	−14 14 4.20	−14 4286
61	9.0	51.6	53.6	55.8	58.0	0.2	c	45 55.84	306 42 9.2 10.0	III 46.520	15 46 21.88	−14 20 9.47	−14 4293
62	9.1	2.6	4.8	6.9	9.0	11.3	c	46 6.92	306 42 " "	V B 47.200	15 46 32.96	14 23 11.17	14 4294
63	8.2	10.7	12.8	15.0	17.2	19.2	c	47 14.98	306 42 " "	III B 41.500	15 47 41.03	14 24 58.65	14 4298
64	9.5	56.3	58.2	0.5	2.6	4.9	c	48 0.50	306 42 " "	V B 41.580	15 48 26.55	14 24 58.40	14 4300
65	....	18.0	20.2	22.3	24.5	26.5	c	49 22.30	306 16 10.0 10.7	III A 40.420	15 49 48.38	14 44 50.43	14 4309
66	9.0	33.0	35.4	37.5	39.7	41.7	c	49 37.46	306 16 " "	V A (42).670	15 50 3.54	14 44 8.69	14 4311
67	......	7.4	9.4	11.5	13.4	15.1	e	49 41.78	306 16	....	15 50 7.87	14 51 54	14 4312
68	8.3	36.6	38.7	40.4	42.4	44.6	a	52 10.27	305 58 10.0 11.5	III C 44.140	15 52 36.39	15 11 20.13	15 4226
69	9.0	23.8	26.0	28.1	30.3	32.4	c	52 28.12	306 6 10.0 10.5	V 43.620	15 52 54.22	14 57 5.29	14 4323
70	9.0	34.4	36.8	38.9	41.0	43.2	c	54 38.86	305 54 10.0 10.2	III 47.365	15 55 4.98	−15 7 52.08	−15 4230
71	9.1	40.4	42.6	44.7	46.8	49.0	c	57 44.70	306 12 10.0 11.0	III 45.580	15 58 10.80	−14 50 24.08	−14 4339
72	9.0	4.3	6.5	8.6	10.7	12.8	c	59 8.58	306 12 " "	III A 40.100	15 59 34.67	14 48 53.40	14 4343
73	8.8	25.4	27.7	29.7	31.9	34.1	c	0 29.76	307 0 10.0 11.5	III 45.680	16 0 55.78	14 2 18.85	13 4337
74	8.9	17.4	19.6	21.8	24.0	26.0	c	1 21.76	306 32 10.0 11.5	III 48.890	16 1 47.82	14 29 18.19	14 4351
75	8.8	49.9	52.0	54.1	56.3	58.5	c	1 54.16	306 32 " "	V C 47.020	16 2 20.24	14 36 21.22	14 4356
76	9.3	50.3	52.3	54.6	56.7	58.8	c	2 54.54	307 0 10.0 11.4	III B 47.830	16 3 20.58	14 4 50.10	13 4349
77	9.1	48.6	50.7	52.6	54.6	56.5	e	3 23.12	307 0 " "	VII 52.150	16 3 49.14	14 0 16.28	13 4351
78	8.7	50.7	52.8	54.9	57.0	59.3	c	4 54.94	307 0 " "	V C 50.310	16 5 20.98	14 7 15.89	14 4362
79	9.7	10.2	12.6	14.7	16.8	......	c	6 14.64	306 30 9.6 10.8	III 42.395	16 6 40.72	14 33 21.85	14 4364
80	8.6	45.5	47.7	49.7	51.6	53.4	e	6 20.03	306 30 " "	VII 45.140	16 6 46.11	−14 32 31.65	−14 4365
81	8.0	31.3	33.5	35.6	37.7	39.3	e	7 5.89	306 10 10.0 11.8	VII 48.010	16 7 32.00	−14 51 36.51	−14 4370
82	9.1	59.2	1.4	3.4	5.6	7.9	c	9 3.50	305 56 10.0 11.3	III B 44.000	16 9 29.64	15 10 4.45	15 4278
83	9.2	32.8	34.9	37.0	39.2	41.4	c	9 37.06	305 56 " "	V C 49.010	16 10 3.20	15 11 42.18	15 4282
84	8.0	41.0	43.0	44.8	46.7	49.1	a	11 14.64	305 56 " "	I 50.210	16 11 40.77	15 4 49.73	14 4389
85	9.4	15.5	17.4	19.7	21.9	24.0	c	11 19.70	305 56 " "	III C 47.990	16 11 45.84	15 12 0.02	15 4291
86	7.5	51.2	53.2	55.3	57.5	59.8	c	12 55.40	306 24 10.0 12.2	III 47.240	16 13 21.49	14 37 45.96	14 4398
87	8.5	43.2	45.3	47.5	49.6	51.7	c	13 47.46	306 38 10.0 11.5	III 46.230	16 14 13.53	14 24 4.78	14 4401
88	.....	......	43.4	45.5	47.4	49.7	a	17 15.18	306 32 10.0 11.6	I B 42.890	16 17 41.27	14 34 19.47	14 4410
89	9.0	12.3	14.6	16.6	18.8	20.9	c	17 16.64	306 32 " "	V A 39.870	16 17 42.72	14 28 52.00	14 4411
90	9.1	11.2	13.3	15.5	17.7	19.8	c	18 15.50	306 10 10.0 11.9	III A 42.420	16 18 41.62	−14 50 2.04	−14 4417
91	9.4	43.3	45.4	47.4	49.7	51.8	c	21 47.52	306 10 " "	III A 42.390	16 22 13.64	−14 50 1.39	−14 4425
92	8.8	56.9	59.0	1.0	3.2	5.4	c	23 1.10	306 40 10.0 12.0	I I C 48.665	16 23 27.18	14 27 40.66	14 4428
93	9.0	30.1	32.2	34.3	36.6	38.7	c	23 34.38	306 40 " "	III 46.620	16 24 0.45	14 21 53.56	14 4431
94	7.5	7.0	9.2	11.1	13.0	14.9	e	23 41.52	306 40 " "	V (A) 42.820	16 24 7.60	14 19 52.56	14 4433
95	9.0	52.4	54.7	56.6	58.6	0.4	e	24 27.02	306 40 " "	VII A 43.960	16 24 53.10	14 19 31.75	14 4434
96	8.6	21.0	22.9	25.2	27.4	29.5	c	27 25.20	307 6 10.0 11.4	III 42.275	16 27 51.24	13 57 14.71	13 4453
97	8.5	5.7	7.8	10.0	12.2	14.2	c	28 9.98	306 32 10.0 11.3	III B 50.440	16 28 36.07	14 31 52.65	14 4445
98	8.8	30.0	32.1	34.3	36.5	38.7	c	30 34.32	307 0 10.0 11.9	III 46.730	16 31 0.36	14 1 48.13	13 4458
99	9.4	49.8	52.0	54.0	56.1	58.3	c	31 54.04	306 36 10.0 11.3	III 47.245	16 32 20.13	14 25 39.19	14 4460
100	8.2	8.0	10.0	12.2	14.3	16.5	c	32 12.20	306 36 " "	V B 47.670	16 32 38.29	−14 28 45.73	−14 4463
101	9.2	54.7	56.6	58.9	1.0	3.2	c	33 58.88	306 36 " "	III 46.260	16 34 24.97	−14 25 57.33	−14 4469
102	9.2	24.5	26.5	28.6	30.7	32.8	c	35 28.62	306 48 10.0 11.8	III 43.900	16 35 54.70	14 14 41.30	14 4472
103	8.7	13.3	15.5	17.6	19.8	22.0	c	37 17.64	306 22 10.0 11.0	III 43.475	16 37 43.76	14 40 50.41	14 4475
104	8.8	39.4	41.5	43.6	45.8	48.0	c	37 43.66	307 4 10.0 11.0	III 46.840	16 38 9.70	13 57 43.76	13 4486
105	9.3	20.4	22.6	24.7	26.9	29.0	c	41 24.72	306 34 10.0 11.0	III 49.730	16 41 50.82	14 26 48.37	14 4484
106	7.0	15.8	17.9	20.0	22.3	24.4	c	42 20.08	306 18 10.0 10.9	III 46.320	16 42 46.21	14 43 54.26	14 4486
107	8.6	5.0	7.0	9.1	11.4	13.5	c	46 9.20	306 50 10.0 11.5	III 45.630	16 46 35.30	14 12 4.39	14 4494
108	9.1	38.7	40.9	43.1	45.3	47.5	c	46 43.10	306 50 " "	III 48.410	16 47 9.20	14 11 10.82	14 4495
109	9.0	8.0	10.0	12.1	14.3	16.5	c	48 12.18	306 50 " "	III 48.280	16 48 38.28	14 11 12.78	14 4498
110	9.4	30.2	32.2	34.3	36.7	38.8	c	50 34.44	306 24 10.0 11.5	III A 46.485	16 51 0.57	−14 34 32.19	−14 4504
111	9.3	49.9	52.0	54.2	56.5	58.7	c	51 54.26	306 24 " "	III B 47.850	16 52 20.40	−14 40 34.17	−14 4506
112	9.0	13.6	15.8	17.8	20.0	22.2	c	52 17.88	306 24 " "	III 49.200	16 52 44.01	14 36 54.85	14 4508
113	7.5	34.0	36.2	38.3	42.6	44.3	c_3 d_2	52 34.07	306 24 " "	V C 50.670	16 53 0.22	14 42 53.92	14 4509
114	9.0	14.0	16.3	18.5	22.5	24.2	c_3 d_2	53 14.09	306 24 " "	V A 45.110	16 53 40.22	14 34 59.11	14 4512
115	9.1	19.0	21.1	23.2	25.5	27.6	c	57 23.28	306 34 10.0 11.5	V 44.730	16 57 49.40	14 28 19.67	14 4527
116	9.0	24.9	27.0	29.2	31.3	33.5	c	58 29.18	306 34 " "	III A 42.180	16 58 55.30	14 25 51.48	14 4535
117	8.9	53.3	55.5	57.6	0.0	2.0	c	58 57.68	306 34 " "	III C 44.640	16 59 23.82	14 34 45.67	14 4538
118	8.9	36.4	38.5	40.7	42.9	45.0	c	59 40.70	306 48 10.0 11.4	V 46.800	17 0 6.80	14 13 38.52	14 4540
119	9.0	21.9	24.1	26.0	28.0	29.8	e	59 56.46	306 48 " "	V 51.200	17 0 22.56	14 12 14.00	14 4542
120	9.3	25.2	27.4	29.5	31.8	33.9	c	1 29.56	307 0 10.0 11.2	III 50.160	17 1 55.64	−14 0 31.59	−13 4545

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
121	9.4	0.5	2.6	4.7	7.0	9.0	c	2 4.76	307 0 10.0 11.2	III C	49.720	17 2 30.86	−14 7 6.03	−14 4551
122	9.2	56.6	58.8	1.0	3.0	5.3	c	3 0.94	307 0 " "	III C	44.660	17 3 27.04	14 8 42.78	14 4555
123	8.0	46.9	49.2	51.3	53.5	55.6	c	5 51.30	306 32 10.0 10.9	III	46.260	17 6 17.43	14 29 46.30	14 4565
124	9.1	45.8	47.8	49.9	52.0	54.2	c	6 49.94	306 50 10.0 11.0	III	42.390	17 7 16.06	14 12 59.31	14 4571
125	9.2	20.2	22.3	24.3	26.3	28.0	e	6 54.65	306 20 10.0 11.1	VII	44.910	17 7 20.81	14 42 14.78	14 4572
126	9.4	37.2	39.4	41.6	43.8	45.9	c	8 41.58	306 50 10.0 11.0	III A	42.795	17 9 7.68	14 9 35.46	14 4582
127	8.2	1.9	4.0	6.2	8.5	10.6	c	9 6.24	306 50 " "	III C	43.310	17 9 32.36	14 19 6.98	14 4584
128	9.3	49.0	51.3	53.3	55.5	57.6	c	10 53.34	306 50 " "	III A	44.780	17 11 19.44	14 8 56.57	14 4592
129	8.3	10.5	12.7	14.7	16.9	19.1	c	12 14.78	305 54 10.0 11.0	III A	43.410	17 12 40.98	15 5 24.99	15 4512
130	8.1	44.4	46.6	48.6	50.8	53.0	c	12 48.68	305 54 " "	III	49.540	17 13 14.88	−15 6 42.50	−15 4514
131	9.3	7.8	10.0	12.1	14.4	16.4	c	13 12.14	305 54 " "	V C	45.490	17 13 38.36	−15 14 27.44	−15 4516
132	8.7	33.4	35.5	37.6	39.8	42.0	c	14 37.66	306 56 10.0 11.6	III A	42.550	17 15 3.76	14 3 37.39	14 4615
133	9.4	49.0	51.0	53.3	55.3	57.5	c	15 53.22	306 56 " "	III C	43.880	17 16 19.34	14 12 52.96	14 4620
134	8.8	15.9	18.0	20.3	22.5	24.6	c	16 20.26	307 6 10.0 11.2	V	47.540	17 16 46.36	13 55 17.45	13 4596
135	9.5	52.6	54.7	56.7	58.8	1.1	c	18 56.78	306 28 10.0 11.5	III A	43.040	17 19 22.93	14 31 27.75	14 4629
136	9.0	1.7	4.0	5.9	8.0	10.2	c	20 5.96	306 28 " "	III B	47.850	17 20 32.12	14 36 23.66	14 4639
137	8.9	14.0	16.2	18.3	20.4	22.6	c	21 18.30	307 6 10.0 11.2	III	42.180	17 21 44.40	13 56 57.14	13 4619
138	8.0	56.3	58.5	0.6	2.8	4.9	c	23 0.62	307 6 " "	III B	42.950	17 23 26.72	13 59 54.99	13 4627
139	9.0	46.6	48.8	50.9	53.1	55.3	c	23 50.94	306 32 10.0 10.5	III	49.685	17 24 17.08	14 28 34.10	14 4662
140	8.8	29.4	31.6	33.6	35.8	37.8	c	24 33.64	306 46 10.0 11.2	III B	43.330	17 24 59.78	−14 19 48.09	−14 4667
141	8.9	55.7	57.8	0.1	2.4	4.3	c	25 0.06	306 46 " "	III	41.880	17 25 26.20	−14 17 2.46	−14 4670
142	8.5	35.8	37.9	40.0	42.2	44.4	c	26 40.06	306 18 10.0 11.3	III	47.920	17 27 6.23	14 43 7.20	14 4677
143	9.6	6.6	9.0	10.9	12.9	14.7	e	26 41.24	306 18 " "	V B	47.840	17 27 7.42	14 46 22.00	14 4678
144	8.8	30.2	32.5	34.6	36.9	38.9	c	27 34.62	306 40 10.0 11.2	V	46.275	17 28 0.75	14 21 38.79	14 4682
145	9.0	3.9	6.3	8.2	10.0	11.9	e	27 38.59	307 6 10.0 11.3	VII	48.430	17 28 4.68	13 54 57.30	13 4651
146	9.0	17.4	19.6	21.7	23.8	26.0	c	29 21.70	307 6 " "	III	45.910	17 29 47.80	13 55 42.51	13 4664
147	8.8	50.7	53.0	55.2	57.3	59.6	c	29 55.16	307 6 " "	III	50.260	17 30 21.26	13 54 18.82	13 4674
148	8.6	25.5	27.5	29.8	31.9	34.1	c	30 29.76	307 6 " "	III B	49.060	17 30 55.86	13 57 54.93	13 4678
149	8.5	2.2	4.3	6.6	8.7	10.9	c	31 6.54	307 6 " "	III	44.060	17 31 32.64	13 56 17.37	13 4682
150	8.5	12.6	14.7	16.8	19.0	21.1	c	32 16.84	307 6 " "	III C	44.180	17 32 42.94	−14 2 40.81	−14 4707
151	9.0	37.7	39.9	42.0	44.3	46.4	c	33 42.06	306 36 10.0 11.3	III	45.180	17 34 8.21	−14 25 55.82	−14 4717
152	9.1	53.8	55.8	58.0	0.2	2.3	c	37 58.02	306 38 10.0 11.0	III	49.530	17 38 24.16	14 22 31.30	14 4743
153	8.8	41.7	43.7	45.5	47.4	49.7	a	39 15.23	306 38 " "	I	44.040	17 39 41.38	14 24 14.67	14 4754
154	8.7	37.8	39.9	42.0	44.3	46.3	c	39 42.06	307 2 9.5 10.5	III	48.395	17 40 8.16	13 58 51.81	13 4741
155	9.0	8.4	10.6	12.7	15.0	17.1	c	40 12.76	307 2 " "	III B	47.120	17 40 38.88	14 2 29.37	14 4760
156	9.1	5.2	7.1	9.4	11.6	13.7	c	41 9.40	306 46 9.2 9.6	III	45.690	17 41 35.54	14 15 44.51	14 4768
157	9.2	9.8	12.0	14.0	16.3	18.5	c	42 14.12	305 54 10.0 10.5	III	47.730	17 42 40.35	15 7 6.62	15 4685
158	8.7	27.9	29.8	31.6	33.3	35.7	a	44 1.26	306 48 10.1 11.9	I	50.845	17 44 27.40	14 12 1.32	14 4780
159	9.4	6.2	8.5	10.4	12.8	15.0	c	44 10.58	306 48 " "	III B	42.630	17 44 36.72	14 17 53.71	14 4784
160	8.9	28.1	30.4	32.5	34.6	36.8	c	44 32.48	306 48 " "	V B	42.400	17 44 58.62	−14 17 59.54	−14 4788
161	9.0	19.4	21.6	23.5	25.9	28.0	c	45 23.68	306 48 " "	V	41.125	17 45 49.82	−14 15 10.21	−14 4792
162	8.6	52.6	54.7	57.0	59.0	3.3	c_2 d_1	45 54.76	306 6 9.1 10.0	V B	42.615	17 46 20.97	14 59 58.36	14 4797
163	9.0	53.0	55.0	57.2	59.3	1.5	c	47 57.20	306 6 " "	III A	43.530	17 48 23.41	14 53 9.84	14 4808
164	9.3	45.7	48.0	50.1	52.2	54.4	c	55 50.08	306 36 10.0 10.9	III A	42.810	17 56 16.25	14 23 18.40	14 4856
165	9.1	59.9	1.9	4.1	6.4	8.4	c	56 4.14	306 36 " "	V B	43.440	17 56 30.32	14 29 36.42	14 4860
166	9.7	46.5	48.8	50.8	52.8	54.8	c	57 50.74	306 36 " "	V C	41.010	17 58 16.93	14 33 34.93	14 4869
167	9.2	32.7	34.8	36.9	38.9	41.1	c	58 36.88	306 0 9.3 9.2	V A	38.110	17 59 3.11	[15 0 52.01]	15 4806
168	8.3	47.1	49.2	51.4	53.7	55.8	c	59 51.44	306 54 10.0 10.4	V B	41.050	18 0 17.60	14 12 20.27	14 4880
169	9.4	24.1	26.2	28.3	30.3	32.0	e	59 58.68	306 54 " "	VII	43.350	18 0 24.82	14 8 23.47	14 4881
170	8.6	14.8	16.9	18.9	21.2	23.2	c	1 19.00	306 54 " "	III A	44.590	18 1 45.14	−14 4 41.59	−14 4892
171	9.3	56.3	58.4	0.6	2.7	4.9	c	3 0.58	307 4 10.0 10.8	III B	46.080	18 3 26.72	−14 0 40.34	−14 4904
172	7.8	32.3	34.5	36.5	38.9	40.9	c	3 36.62	307 4 " "	III	47.380	18 4 2.74	13 57 1.91	13 4863
173	9.1	32.7	34.8	36.5	38.4	40.7	a	5 6.25	306 34 10.0 11.0	I	48.810	18 5 32.43	−14 26 33.74	−14 4918

Reduction Elements. Zone 120.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 7.3....	−0.041	−0.095	−0.152	−0.033	−0.084	−0.193
7.5....	−0.025	−0.072	−0.234			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	α Virginis		*m* Virginis		40 H. Virginis		κ Virginis		2 Librae		μ Virginis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	310 26 10.65		312 52 10.75		305 14 10.95		311 14 11.05		309 48 11.40		315 50 11.05	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	40.900	4 19.27	41.995	4 39.73	42.910	4 58.69	46.190	6 0.21	43.300	5 4.85	42.610	4 51.48
II Red. to Mer.	.945	0.10	42.000	0.08	43.000	0.16	.155	0.10	.270	0.11	.580	0.05
VI Inclination	41.070		.135		.145		.340		.470		.780	
VII Refraction	.105	1 6.1	.160	1 0.7	.190	1 19.7	.390	1 4.3	.490	1 7.7	.770	54.9

	o Serpentis.		Mayer 703		ν Ophiuchi		μ Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	308 12 9.85		302 16 10.30		311 16 10.25		299 58 10.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	46.850	6 13.64		4 41.38	44.970	5 37.13	41.985	4 39.69
II Red. to Mer.	.895	0.13	42.110	0.17	.990	0.10	42.015	0.21
VI Inclination	47.025		.160	−0.67	45.140		.100	
VII Refraction	.105	1 12.5	.205	1 30.4	.160	1 5.1	.180	1 38.9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
α Virginis	13 19 29.60	11	−0.24	+12.46	310 29 23.9	28.6
α Ursae Minoris S. P.	13 19 34.17	7	−3.13	[+13.86]	52 18	....
m Virginis	13 35 56.22	11	−0.23	+12.31	312 55 49.9	29.6
40 H. Virginis	14 4 56.67	11	−0.25	+12.36	305 17 50.1	30.0
κ Virginis	14 7 7.95	11	−0.24	+12.35	311 19 7.1	29.6
2 Librae	14 17 36.91	11	−0.24	+12.40	309 52 8.7	29.7
μ Virginis	14 37 22.02	11	−0.23	+12.34	315 54 7.7	29.6
o Serpentis	17 35 21.64	11	−0.24	+12.40	308 17 11.1	29.7
Mayer 703	17 49 35.35	11	−0.25	+12.45	302 19 20.8	29.9
ν Ophiuchi	17 53 5.56	11	−0.24	+12.40	311 20 42.4	29.8
δ Ursae Minoris	18 6 8.78	5	+0.90	[+12.96]	47 40	....
μ Sagittarii	18 7 20.10	11	−0.26	+12.37	300 1 11.3	28.9

h		s
14.005	*dt*	+12.370
	Hourly rate	+ 0.0091

Adopted Equator Point .... 321° 6′ 29.54″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
13 21	30.107	68.0	67.1
14 1	30.112	67.6	66.9
15 1	30.110	65.4	64.2
16 15	30.095	63.7	62.2
16 56	30.096	62.8	60.4
18 11	30.092	61.2	59.3

Notes.

1. Bright wire illumination.

79. Thin clouds.

κ Virginis. Images unsteady.

Full moon on the meridian at 17ʰ 44ᵐ.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
305	−0.248
306	0.247
307	0.245
308	−0.243

APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				$D =$ Z. D. N. to 1895.0			
	305°	306°	307°	308°	305°	306°	307°	308°
h m	s	s	s	s	″	″	″	″
13 30	+13.853	+13.805	+13.755	......	+18.80	+18.53	+18.25	.....
14 0	13.903	13.841	13.781	+13.720	18.75	18.51	18.26	+18.00
14 30	13.951	13.879	13.806	13.736	18.40	18.18	17.96	17.75
15 0	13.997	13.914	13.834	13.753	17.78	17.61	17.43	17.24
15 30	14.040	13.950	13.860	13.771	16.88	16.74	16.60	16.45
16 0	14.079	13.981	13.886	13.790	15.71	15.61	15.51	15.41
16 30	14.114	14.011	13.910	13.809	14.30	14.25	14.20	14.14
17 0	14.144	14.040	13.935	13.829	12.69	12.68	12.67	12.66
17 30	+14.169	14.062	13.957	13.851	+10.89	10.93	10.96	11.00
18 0	......	14.082	13.976	13.870	.....	9.01	9.09	9.17
18 30	......	+14.095	+13.993	+13.889	.....	+ 6.97	+ 7.10	+ 7.21

APPARENT RIGHT ASCENSION.	*R*			
	305°	306°	307°	307° 30′
h m	″	″	″	″
13 30	80.63	77.73	74.96	73.60
14 0	80.67	77.77	74.99	73.64
14 30	80.87	77.96	75.18	73.82
15 0	81.08	78.16	75.37	74.01
15 30	81.19	78.27	75.48	74.11
16 0	81.32	78.40	75.60	74.23
16 30	81.47	78.54	75.74	74.37
17 0	81.66	78.72	75.91	74.54
17 30	81.73	78.80	75.98	74.61
18 0	81.79	78.85	76.03	74.66
18 30	81.85	78.90	76.08	74.71

1895 JUNE 10. ZONE 121. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.9	18.8	21.0	23.1	25.3	27.5	c	26 23.14	303 38 10.0 10.5	III 41.240	[14 26 48.82]	—17 26 19.85	—17 4110
2	9.0	51.9	53.9	58.4	0.1	2.6	$c_4 d_3$	35 49.73	304 10 10.0 11.1	VI A 41.190	[14 36 15.39]	16 51 3.41	16 3917
3	9.2	24.4	26.5	28.6	32.9	34.6	$c_3 d_2$	36 24.33	304 10 " "	V 44.750	[14 36 49.99]	16 53 9.47	16 3919
4	9.3	1.1	3.4	5.4	7.7	9.8	c	37 5.48	304 10 " "	V 44.850	[14 37 31.14]	16 53 7.39	16 3924
5	9.2	9.0	11.3	13.4	15.5	17.7	c	44 13.38	303 12 10.0 11.1	III B 46.370	[14 44 39.13]	17 53 51.08	17 4187
6	9.1	16.7	18.8	20.9	23.2	25.4	c	45 21.00	303 12 " "	III A 45.200	[14 45 46.74]	17 47 44.60	17 4192
7	7.8	44.7	47.0	49.2	51.4	53.5	c	45 49.16	303 12 " "	III C 47.810	[14 46 14.92]	17 56 35.97	17 4200
8	9.0	32.1	34.2	36.4	38.7	40.8	c	54 36.44	303 0 10.0 10.6	III 45.290	[14 55 2.22]	18 2 56.63	17 4233
9	8.0	59.4	1.6	3.6	5.8	8.0	c	57 3.68	303 48 10.0 11.0	III 47.080	[14 57 29.40]	17 14 19.00	17 4243
10	9.1	46.0	48.3	50.4	52.6	54.6	c	58 50.38	302 48 10.0 10.5	III A 44.855	[14 59 16.18]	—18 11 49.08	—18 3965
11	8.8	10.9	13.0	15.2	17.5	19.6	c	59 15.24	302 48 " "	III 47.630	[14 59 41.05]	—18 14 11.10	—18 3969
12	8.5	11.3	13.4	15.6	17.7	19.9	c	3 15.58	303 26 10.0 10.6	III 42.350	[15 3 41.34]	17 37 49.34	17 4259
13	8.6	2.9	5.1	7.2	9.5	11.6	c	4 7.26	303 26 " "	III B 43.920	[15 4 33.03]	17 40 32.26	17 4263
14	9.1	55.1	57.3	59.5	1.9	4.0	c	5 59.56	303 18 10.0 10.8	III B 42.460	[15 6 25.34]	17 49 0.04	17 4272
15	8.0	16.7	19.1	21.2	23.2	25.6	c	6 21.16	303 18 " "	III A 41.655	[15 6 46.93]	17 42 46.69	17 4273
16	9.2	6.6	8.5	10.7	12.4	14.8	a	7 40.73	303 18 " "	I (C) 45.900	[15 8 6.52]	17 51 5.08	17 4280
17	7.7	25.2	27.5	29.5	31.8	34.0	c	8 29.60	303 40 10.0 11.2	III 42.575	[15 8 55.35]	17 23 42.51	17 4285
18	8.8	52.0	54.2	56.4	58.8	1.0	c	14 56.48	302 46 10.0 10.6	III 42.470	[15 15 22.32]	18 17 45.71	18 4043
19	9.0	9.7	12.1	14.0	16.2	18.4	c	18 14.08	304 6 10.0 11.1	III 43.275	[15 18 39.81]	16 57 24.98	16 4074
20	8.9	11.6	13.7	15.8	18.0	20.3	c	20 15.88	303 24 10.0 11.5	III 44.725	[15 20 41.67]	—17 38 58.39	—17 4330

Reduction Elements. Zone 121.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 10.4....	—0.049	—0.161	—0.186	—0.049	—0.161	—0.186

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		40 H. Virginis		κ Virginis		2 Librae		Mayer 575	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	305 14 10.70		311 14 10.70		309 48 11.05		301 4 10.35	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	42.875	4 57.54	46.110	5 59.62	43.190	5 3.44	42.460	4 49.27
II	Red. to Mer......	.935	0.16	.180	0.10	.220	0.11	.470	0.20
VI	Inclination	43.065		.310		.410		.655	
VII	Refraction.......	.130	1 19.2	.350	1 3.8	.410	1 7.2	.690	1 32.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
40 H. Virginis........	14 4 57.14	11	—0.31	+11.95	305 17 49.2	29.2
κ Virginis	14 7 8.44	11	—0.30	+11.91	311 19 6.6	29.0
4 Urae Minoris......	14 9 10.14	10	—0.27	[+12.00]	39 6	....
2 Librae............	14 17 37.42	11	—0.30	+11.96	309 52 7.4	28.4
Mayer 575	14 28 47.03	11	—0.31	+12.02	301 7 27.0	28.9

h 14.244..........*dt* .... +11.960 s

Hourly rate 0.0000

Adopted Equator Point ....321° 6′ 28.88″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 3	29.938	69.5	67.5
15 0	29.938	68.8	66.9

Notes.

9. Images unsteady.

18. Seeing very bad.

Right ascensions discordant and rejected because no zero stars at end of zone.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D*=Z. D. N. to 1895.0				*R*		
			302°	303°	304°	305°	302°	303°	304°	305°	302° 30′	303° 30′	304° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
303	—0.308	14 0	......	+14.024	+13.961	+13.900	.....	+19.33	+19.07	+18.82	88.00	84.72	81.62
304	0.306	14 30	+14.161	14.087	14.014	13.941	+19.15	18.93	18.70	18.47	88.04	84.76	81.66
305	—0.305	15 0	14.228	14.145	14.062	13.981	18.42	18.23	18.04	17.85	88.10	84.82	81.71
		15 30	+14.288	+14.196	+14.105	+14.014	+17.38	+17.24	+17.09	+16.93	88.17	84.88	81.77

1895 JUNE 17. ZONE 122. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	7.5	6.9	9.0	11.1	13.3	15.4	c	44 11.14	305 56 10.0 12.0	III	45.975	14 44 34.66	−15 6 37.84	−14 4039
2	7.8	5.0	7.2	9.2	11.5	13.7	c	45 9.32	306 26 10.0 12.1	III	45.215	14 45 32.81	14 36 50.83	14 4045
3	8.6	35.2	37.3	39.3	41.5	43.7	c	45 39.40	306 26 " "	III B	44.950	14 46 2.89	14 40 9.04	14 4050
4	9.0	52.7	54.8	57.0	1.2	2.9	c_3 d_2	45 52.71	306 26 " "	V	49.435	14 46 16.20	14 35 31.00	14 4051
5	......	35.0	37.2	39.4	41.6	43.6	c	49 39.36	306 44 10.0 12.9	III	42.430	14 50 2.83	14 19 41.89	14 4070
6	9.2	58.9	1.1	3.2	5.4	7.5	c	51 3.22	306 30 10.0 11.6	III C	46.565	14 51 26.71	14 38 49.56	14 4073
7	9.0	29.4	31.7	33.8	36.0	38.0	c	51 33.78	306 30 " "	III A	42.710	14 51 57.26	14 30 21.87	14 4077
8	8.9	14.2	16.3	18.5	20.6	22.6	c	54 18.44	306 44 10.0 11.6	III	42.060	14 54 41.91	14 19 48.36	14 4085
9	8.5	55.5	57.9	59.9	2.1	4.3	c	54 59.94	306 24 10.0 12.5	III	48.390	14 55 23.43	14 37 47.08	14 4087
10	8.8	22.7	24.8	26.9	29.0	31.1	c	56 26.90	306 24 " "	III C	47.210	14 56 50.40	−14 44 35.47	−14 4093
11	8.3	46.6	48.8	50.9	53.0	55.2	c	56 50.90	306 24 " "	V	43.440	14 57 14.39	−14 39 22.90	−14 4096
12	9.2	0.3	2.4	4.5	6.6	8.9	c	58 4.54	306 24 " "	III B	42.845	14 58 28.04	14 42 45.89	14 4101
13	9.0	22.5	24.7	26.8	29.1	31.4	c	58 26.90	306 24 " "	III	43.040	14 58 50.40	14 39 28.79	14 4107
14	8.0	44.1	46.3	48.4	50.7	52.7	c	58 48.44	306 24 " "	V A	42.580	14 59 11.93	14 36 23.64	14 4109
15	9.3	28.1	29.9	31.8	33.7	35.8	a	1 1.47	306 50 10.0 11.9	I B	44.170	15 1 24.93	14 16 17.12	14 4118
16	8.5	7.9	10.0	12.1	14.4	16.5	c	1 12.18	306 50 " "	III	41.630	15 1 35.64	14 13 54.26	14 4119
17	8.4	25.5	27.7	29.8	31.9	34.0	c	1 29.78	306 50 " "	V B	40.310	15 1 53.24	14 17 34.32	14 4121
18	8.1	58.6	0.8	2.9	5.1	7.3	c	2 2.94	306 50 " "	V	46.200	15 2 26.40	14 12 27.67	14 4123
19	8.8	17.3	19.2	21.1	23.2	25.3	a	5 50.91	306 12 10.0 12.0	I	43.760	15 6 14.42	14 51 12.08	14 4140
20	8.7	13.9	16.0	18.2	20.3	22.4	c	6 18.16	307 2 10.0 11.5	III	44.120	15 6 41.61	−14 1 4.71	−13 4102
21	8.6	44.3	46.5	48.6	50.7	52.8	c	9 48.58	306 48 10.0 12.2	III B	41.000	15 10 12.06	−14 19 17.05	−14 4160
22	8.6	58.6	0.7	2.9	5.0	7.1	c	11 2.86	306 48 " "	III	48.120	15 11 26.33	14 13 46.78	14 4165
23	8.8	55.6	57.7	59.8	2.0	4.2	c	13 59.86	306 58 10.0 12.0	III A	43.180	15 14 23.32	14 2 5.02	13 4129
24	9.0	22.3	24.4	26.5	28.7	30.8	c	16 26.54	306 58 " "	III B	41.790	15 16 50.01	14 8 59.58	13 4139
25	8.9	15.1	17.3	19.5	21.6	23.8	c	18 19.46	306 42 10.0 11.6	III	47.210	15 18 42.94	14 20 2.62	14 4194
26	8.0	39.3	41.4	43.5	45.7	47.8	c	21 43.54	306 24 10.0 12.0	III A	42.420	15 22 7.05	14 36 18.71	14 4208
27	9.3	56.6	58.8	0.9	3.1	5.3	c	23 0.94	306 24 " "	III C	41.940	15 23 24.46	14 46 9.04	14 4213
28	8.6	0.6	2.8	4.9	7.0	9.2	c	27 4.90	306 0 10.0 11.4	III	42.550	15 27 28.45	15 3 31.28	14 4227
29	8.5	10.5	12.6	14.4	16.3	18.6	a	49 44.17	306 12 10.0 12.1	I	40.870	15 50 7.72	14 51 53.92	14 4312
30	8.0	40.9	42.9	44.7	46.5	48.9	a	50 14.37	306 58 10.0 12.8	I	39.470	15 50 37.85	−14 6 18.28	−13 4290
31	9.2	22.1	24.0	26.0	27.9	30.1	a	50 55.73	306 0 10.0 12.2	III	45.360	15 51 19.29	−15 2 29.34	−14 4316
32	8.8	1.9	4.0	6.4	10.5	12.1	c_3 d_2	51 1.98	307 0 10.0 13.1	V B	46.100	15 51 25.46	14 5 26.86	13 4296
33	9.1	48.7	50.9	53.2	55.3	57.4	c	51 53.10	307 0 " "	V	46.(350)	15 52 16.58	14 2 8.31	13 4300
34	9.0	10.1	12.0	16.4	18.0	20.7	c_4 d_3	52 7.89	307 0 " "	V C	41.710	15 52 31.38	14 10 3.25	14 4321
35	6.0	37.3	39.4	41.4	43.3	45.3	e	52 11.86	307 0 " "	VII A	44.(590)	15 52 35.33	13 59 28.12	13 4302
36	8.9	58.1	0.3	2.4	4.6	6.7	c	55 2.42	307 0 " "	III C	46.560	15 55 25.91	14 8 28.07	14 4329
37	9.0	25.2	27.4	29.5	31.7	33.8	c	58 29.52	307 0 10.0 12.5	III	45.530	15 58 53.00	14 2 20.82	13 4331
38	9.1	41.3	43.6	45.7	47.9	50.1	c	6 45.72	305 58 10.0 11.6	V	44.720	16 7 9.29	15 4 38.06	14 4368
39	8.3	53.0	55.2	57.2	59.5	1.6	c	8 57.30	306 40 10.0 12.0	III	42.950	16 9 20.81	14 23 7.86	14 4379
40	7.5	44.8	47.0	49.0	51.2	53.4	c	9 49.08	306 26 10.0 11.6	III	46.760	16 10 12.61	−14 35 55.28	−14 4383
41	9.1	5.6	7.7	9.8	12.0	14.2	c	11 9.86	306 14 10.0 12.2	III	44.530	16 11 33.41	−14 48 37.86	−14 4388
42	9.1	17.3	19.5	21.6	23.7	25.8	c	23 21.58	306 8 10.0 12.0	III A	44.170	16 23 45.14	14 51 25.54	14 4430
43	9.0	28.3	30.5	32.6	34.7	36.9	c	24 32.60	306 8 " "	III C	47.300	16 24 56.18	15 0 6.61	14 4435
44	8.8	31.0	33.1	35.2	37.4	39.6	c	27 35.26	306 14 10.0 12.5	III	44.270	16 27 58.82	14 48 37.00	14 4443
45	9.3	43.9	46.0	48.1	50.2	52.4	c	29 48.12	306 14 " "	III B	41.690	16 30 11.68	14 52 39.00	14 4452
46	8.9	16.7	18.7	20.9	23.0	25.3	c	33 20.92	306 20 10.0 12.0	III	42.080	16 33 44.47	14 43 16.97	14 4467
47	9.0	1.4	3.6	5.7	8.0	10.1	c	35 5.76	306 4 10.0 12.0	III	46.820	16 35 29.34	14 57 46.10	14 4470
48	8.7	29.6	31.9	34.0	36.1	38.3	c	37 33.98	305 58 10.0 12.0	III	48.280	16 37 57.57	15 3 17.47	14 4476
49	9.1	46.5	48.7	50.9	53.0	55.1	c	37 50.84	305 58 " "	V B	46.305	16 38 14.43	15 7 10.13	15 4381
50	8.5	55.6	57.8	59.9	2.1	4.1	c	45 59.90	306 24 10.0 12.4	III	45.880	16 46 23.45	−14 37 59.19	−14 4492
51	9.1	24.2	26.3	28.4	30.7	32.8	c	48 28.48	306 38 10.0 12.6	III	42.885	16 48 52.01	−14 24 55.02	−14 4499
52	8.0	1.6	3.8	5.9	8.1	10.2	c	52 5.92	306 50 10.0 11.4	III	42.440	16 52 29.43	14 13 2.32	14 4507
53	9.0	49.7	51.9	53.8	56.2	58.3	c	52 53.98	306 10 10.0 11.6	III	44.540	16 53 17.56	14 52 23.42	14 4510
54	8.8	14.8	16.6	18.7	20.5	22.9	a	57 48.30	306 54 10.0 11.7	I	44.020	16 58 11.81	14 8 28.08	14 4528
55	9.0	56.8	59.0	1.0	3.2	5.3	c	58 1.06	306 14 10.0 11.6	III	48.085	16 58 24.64	14 47 13.37	14 4531
56	9.1	48.8	51.0	53.3	55.5	57.7	c	58 53.26	305 54 10.0 11.5	III B	43.060	16 59 16.87	15 12 3.75	15 4444
57	8.7	22.6	24.7	26.7	28.7	30.5	e	58 57.00	305 54 " "	VII	46.820	16 59 20.61	15 7 40.77	15 4445
58	9.0	41.0	43.1	45.2	47.3	49.5	c	1 45.22	306 28 10.0 12.2	III	46.780	17 2 8.78	14 33 36.13	14 4550
59	8.9	33.4	35.4	37.3	39.2	41.5	a	3 7.09	305 56 10.0 11.2	I C	49.160	17 3 30.70	15 11 16.76	15 4460
60	9.3	9.6	11.8	13.9	16.1	18.3	c	3 13.94	305 56 " "	III	50.530	17 3 37.54	−15 4 25.60	−15 4462
61	9.0	55.6	57.8	59.9	2.2	4.3	c	4 59.96	306 0 10.0 11.3	III B	44.400	17 5 23.56	−15 5 35.64	−15 4473
62	8.6	55.4	57.3	59.0	1.0	3.3	a	6 28.92	306 0 " "	I	43.830	17 6 52.51	15 2 31.24	14 4568
63	9.0	39.8	42.0	44.1	46.3	48.3	c	6 44.10	305 52 10.0 11.5	III B	39.710	17 7 7.72	15 15 5.29	15 4485
64	9.2	18.9	20.9	23.0	25.3	27.5	c	7 23.12	305 52 " "	III A	39.470	17 7 46.72	15 8 40.99	15 4487
65	7.5	11.4	13.4	15.6	17.7	19.8	c	9 15.58	306 34 10.0 12.0	III	44.870	17 9 39.12	−14 28 9.89	−14 4585

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
66	8.0	5.0	7.3	9.5	11.7	13.9	c	10 9.48	305 56	10.0	11.8	III	43.260	17 10 33.08	−15 6 42.28	−15 4502
67	8.9	34.4	36.3	38.0	40.0	42.3	a	12 7.86	306 22	10.0	12.2	I	40.680	17 12 31.43	14 41 28.16	14 4598
68	9.3	21.2	23.4	25.5	27.8	29.9	c	12 25.56	306 12	10.0	11.8	III A	40.130	17 12 49.14	14 48 25.40	14 4601
69	9.4	42.4	44.8	46.8	48.9	51.1	c	12 46.80	306 12	"	"	V B	45.860	17 13 10.38	14 53 5.53	14 4602
70	8.9	46.0	48.1	50.4	52.5	54.8	c	15 50.36	306 12	"	"	III C	42.950	17 16 13.94	−14 57 11.59	−14 4619
71	8.5	34.2	36.2	38.3	40.6	42.8	c	20 38.42	306 0	10.0	10.5	III	43.760	17 21 2.02	−15 2 29.33	−14 4644
72	8.8	49.4	51.5	53.6	55.9	58.0	c	21 53.68	306 52	10.0	11.1	III	41.640	17 22 17.20	14 11 6.88	14 4650
73	8.8	9.9	12.0	14.3	16.4	18.5	c	23 14.22	306 52	"	"	III	43.190	17 23 37.74	14 10 36.63	14 4658
74	8.9	22.0	24.3	26.4	28.5	30.7	c	24 26.38	306 20	10.0	11.0	III	46.230	17 24 49.95	14 41 39.36	14 4665
75	9.1	2.2	4.4	6.0	7.8	10.5	a	27 35.89	306 2	10.0	10.9	I	43.820	17 27 59.50	15 0 23.82	14 4683
76	9.1	32.0	34.2	36.1	38.3	40.5	c	27 36.22	306 2	"	"	III B	44.270	17 27 59.82	15 3 29.99	15 4592
77	8.6	40.4	42.4	44.2	46.1	48.4	a	29 13.91	306 44	10.0	11.6	I	46.810	17 29 37.44	14 17 23.54	14 4691
78	8.1	33.8	36.0	38.3	40.5	42.6	c	29 38.24	306 32	10.0	11.9	III C	50.620	17 30 1.80	14 34 38.37	14 4693
79	9.2	6.8	8.8	10.7	12.6	14.9	a	30 40.39	306 32	"	"	III A	45.825	17 31 3.94	14 26 28.46	14 4696
80	9.0	15.4	17.3	19.0	20.9	23.3	a	34 48.79	306 50	10.0	11.5	I	43.910	17 35 12.31	−14 12 16.94	−14 4724
81	9.1	24.0	26.3	28.4	30.6	32.7	c	35 28.40	306 8	10.0	11.6	III	42.400	17 35 51.98	−14 54 49.07	−14 4727
82	8.9	9.1	11.3	13.3	15.5	17.8	c	36 13.40	306 8	"	"	III B	44.960	17 36 37.00	14 57 12.94	14 4734
83	8.9	3.9	6.0	8.2	10.2	12.3	c	37 8.12	306 8	"	"	III B	44.360	17 37 31.72	14 57 24.12	14 4737
84	8.9	18.0	20.3	22.5	24.7	26.8	c	37 22.46	306 8	"	"	V	43.595	17 37 46.04	14 54 26.79	14 4739
85	8.9	43.8	46.0	48.0	50.2	52.2	c	38 48.04	306 18	10.0	11.8	III B	48.180	17 39 11.62	14 46 9.62	14 4747
86	9.1	53.4	55.7	57.9	0.1	2.2	c	38 57.86	306 18	"	"	V C	44.080	17 39 21.44	14 50 42.33	14 4748
87	8.9	23.3	25.4	27.6	29.8	32.0	c	40 27.62	306 18	"	"	III	47 740	17 40 51.19	14 43 4.20	14 4762
88	9.1	54.9	57.0	59.0	1.0	2.9	e	40 29.38	306 18	"	"	V	43.955	17 40 52.96	14 44 18.15	14 4763
89	7.0	26.7	28.8	30.9	33.1	35.3	c	41 30.96	306 18	"	"	III A	43.060	17 41 54.53	14 41 18.25	14 4770
90	9.0	33.8	35.9	37.6	39.4	41.8	a	45 7.26	307 6	10.0	12.0	I	44.675	17 45 30.76	−13 55 57.49	−13 4765
91	9.1	57.4	59.3	1.2	3.2	5.4	a	45 30.86	307 6	"	"	I	43.330	17 45 54.36	−13 56 23.13	−13 4768
92	9.0	22.1	24.4	26.6	28.7	32.9	c_2 d_1	45 24.38	306 20	10.0	12.0	V	44.980	17 45 47.96	14 41 56.50	14 4790
93	9.2	56.4	58.4	0.3	2.2	4.4	a	52 30.01	306 16	10.0	11.8	I A	44.675	17 52 53.59	14 42 41.64	14 4833
94	9.3	19.7	21.7	23.5	25.4	27.6	a	52 53.26	306 16	"	"	I C	45.180	17 53 16.86	14 52 13.72	14 4836
95	9.3	12.4	14.4	16.5	18.9	20.9	c	53 16.62	306 36	10.0	12.1	III A	46.820	17 53 40.16	14 22 0.79	14 4838
96	9.1	51.5	53.7	55.7	58.0	0.0	c	53 55.78	306 36	"	"	V (B)	43.370	17 54 19.34	14 29 36.97	14 4841
97	8.3	28.9	31.0	33.1	35.1	36.9	e	54 3.42	306 18	10.0	12.0	VII B	45.340	17 54 27.01	14 47 1.37	14 4842
98	9.1	45.4	47.5	49.6	51.8	54.1	c	58 49.68	306 18	"	"	III	46.960	17 59 13.26	14 43 12.46	14 4872
99	9.4	0.5	2.6	4.7	6.9	9.0	c	0 4.74	306 2	10.0	11.0	III B	44.270	18 0 28.34	15 3 18.08	15 4813
100	8.4	22.9	25.1	27.1	29.3	31.3	c	0 27.14	306 2	"	"	III	48.150	18 0 50.74	−14 58 51.52	−14 4884
101	9.3	59.3	1.6	3.7	5.9	8.0	c	1 3.70	306 2	"	"	III B	42.790	18 1 27.30	−15 3 46.12	−15 4820
102	9.0	14.9	17.1	19.3	21.5	23.7	c	1 19.30	306 2	"	"	V	44.600	18 1 42.90	14 59 59.33	15 4822
103	9.5	30.6	32.7	34.9	37.0	39.2	c	2 34.88	306 2	"	"	III B	47.790	18 2 58.48	15 2 9.60	15 4829
104	9.0	42.4	44.5	46.6	48.7	50.9	c	2 46.62	306 2	"	"	V B	44.310	18 3 10.22	15 3 17.85	15 4830
105	8.8	27.9	30.1	32.1	34.1	35.9	e	3 2.39	306 2	"	"	VII B	40.740	18 3 25.99	15 4 27.62	15 4834
106	9.3	32.3	34.7	36.8	38.8	41.0	c	9 36.72	306 20	10.0	11.0	III B	42.390	18 10 0.31	14 45 49.82	14 4953
107	8.9	4.9	7.0	9.2	11.4	13.6	c	10 9.22	306 20	"	"	III	48.560	18 10 32.80	14 40 37.92	14 4959
108	9.0	27.2	29.5	31.8	33.8	35.9	c	10 31.64	306 20	"	"	V	45.775	18 10 55.22	14 41 32.59	14 4964
109	9.1	23.2	25.5	27.4	29.4	31.2	e	10 57.87	307 10	10.0	11.1	V	43.570	18 11 21.37	13 52 12.35	13 4906
110	9.0	57.7	0.0	1.8	3.8	5.6	e	12 32.32	307 10	"	"	V	50.790	18 12 55.81	−13 49 53.24	−13 4925
111	8.9	28.5	30.5	32.6	34.8	37.0	c	12 32.68	307 10	"	"	III	49.360	18 12 56.17	−13 50 19.32	−13 4926
112	9.1	17.9	20.0	22.2	23.9	25.8	e	12 52.50	307 10	"	"	VII	47.840	18 13 15.99	13 50 50.89	13 4932
113	9.4	35.0	37.3	39.2	41.4	43.7	c	14 39.32	305 58	10.0	11.0	III B	47.390	18 15 2.93	15 6 13.09	15 4934
114	8.7	54.7	56.9	59.1	1.1	5.5	c_2 d_1	14 56.90	305 58	"	"	V A	42.690	18 15 20.50	15 1 16.02	15 4939
115	8.8	2.0	4.1	6.3	8.5	10.6	c	16 6.30	305 58	"	"	III B	40.890	18 16 29.92	15 8 17.32	15 4946[1]
116	8.8	32.6	34.7	36.7	38.5	40.5	e	16 6.97	305 58	"	"	VII B	41.600	18 16 30.58	15 8 6.59	15 4946[2]
117	9.1	22.0	24.1	26.2	28.7	30.6	c	18 26.32	306 16	10.0	11.0	III B	46.880	18 18 49.90	14 48 20.64	14 5032
118	9.1	52.9	54.8	56.6	58.7	0.9	a	18 26.47	306 16	"	"	I B	42.625	18 18 50.05	14 49 40.58	14 5033
119	8.7	56.1	58.2	0.4	2.5	4.7	c	19 0.38	306 16	"	"	III A	45.850	18 19 23.96	14 42 11.56	14 5037
120	8.8	56.7	58.8	1.0	3.1	5.3	c	20 0.98	306 16	"	"	III C	48.790	18 20 24.56	−14 50 56.33	−14 5044
121	9.1	56.2	58.3	0.4	2.6	4.7	c	22 0.44	306 8	10.0	11.0	III	44.410	18 22 24.04	−14 53 53.88	−14 5065

Reduction Elements. Zone 122.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 17.3....	−0.069	−0.211	−0.478	−0.049	−0.166	−0.482
17.5....	−0.029	−0.120	−0.485			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		Mayer 575		μ Virginis		41 Librae		η Librae		ξ Serpentis		Mayer 703	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	301 4 10.80		315 50 11.05		302 4 10.80		305 42 11.00		305 42 10.55		302 16 10.55	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq	42.470	4 49.65	42.550	4 50.65	46.640	6 10.00	43.145	5 2.52		5 30.42	41.905	4 38.69
II	Red to Mer	.535	0.20	.575	0.05	.725	0.19	.210	0.15	44.620	0.13	.925	0.19
VI	Inclination	.650		.710		.880		.340		.780	−0.67	42.115	
VII	Refraction	.700	1 33.4	.735	54.8	.870	1 29.9	.345	1 18.5	.745	1 18.8	.125	1 29.7

		μ Sagittarii		2 H. Scuti	
		° ′ ″		° ′ ″	
	CIRCLE READING.	299 58 10.40		306 24 10.60	
		r	′ ″	r	′ ″
I	Microm. Eq.		4 39.85		5 32.38
II	Red. to Mer.		0.21	44.710	0.13
VI	Inclination	42.060	−1.68	.880	−0.67
VII	Refraction	.095	1 38.2	.865	1 17.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Mayer 575	14 28 49.08	11	−0.58	+10.19	301 7 27.2	29.1
μ Virginis	14 37 24.50	11	−0.51	+10.11	315 54 7.0	28.3
41 Librae	15 32 45.15	11	−0.58	+10.16	302 8 51.1	29.6
η Librae	15 38 3.20	11	−0.56	+10.16	305 45 55.2	28.5
Groombridge 750 S. P	16 3 23.02	11	−3.12	[+10.20]	55 46	....
ξ Serpentis	17 31 28.04	11	−0.56	+10.16	305 46 21.6	28.0
Mayer 703	17 49 38.04	11	−0.58	+10.23	302 19 19.7	28.6
δ Ursae Minoris	18 6 9.07	4	+3.31	[+10.26]	47 40	....
μ Sagittarii	18 7 22.71	11	−0.59	+10.27	300 1 10.6	28.0
2 H. Scuti	18 23 6.26	11	−0.55	+10.27	306 28 25.4	29.0

h 15.070 .... *dt* .... s +10.155

Hourly rate .... + 0.0266

Adopted Equator Point .... 321° 6′ 28.64″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 25	30.078	68.4	66.2
15 25	30.072	67.0	65.0
16 25	30.050	65.8	64.2
17 25	30.034	64.6	63.0
18 25	30.020	63.2	61.3

Notes.

5. Close double. Magnitudes 9.1, 9.1.
24. Seeing good; images steady.
33, 35. Micrometer readings interchanged. These readings are the first and last of a set of three read from the micrometer head. It has been assumed that they were read in the wrong order.
115. Bluish.
116. Slightly yellow.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1895.0				*R*		
			305°	306°	307°	308°	305°	306°	307°	308°	305° 30′	306° 30′	307° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
305	−0.561	14 30	......	+13.918	+13.846	+13.775	.....	+18.04	+17.79	+17.52	79.21	76.38	73.66
306	0.556	15 0	......	13.932	13.849	13.771	.....	17.46	17.24	17.01	79.29	76.45	73.72
307	0.551	15 30	......	13.941	13.853	13.764	.....	16.61	16.41	16.22	79.36	76.52	73.79
308	−0.545	16 0	......	13.949	13.852	13.756	.....	15.45	15.30	15.15	79.40	76.56	73.82
		16 30	+14.053	13.951	13.850	......	+14.17	14.06	13.95	.....	79.45	76.61	73.88
		17 0	14.054	13.950	13.846	......	12.49	12.42	12.35	.....	79.52	76.68	73.94
		17 30	+14.050	13.944	13.839	13.734	+10.61	10.59	10.57	10.54	79.62	76.77	74.03
		18 0	......	13.936	13.832	13.726	.....	8.57	8.59	8.61	79.73	76.88	74.13
		18 30	......	+13.923	+13.821	+13.719	.....	+ 6.42	+ 6.48	+ 6.55	79.84	76.98	74.23

1895 JUNE 18. ZONE 123. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.0	16.0	18.2	20.2	22.5	24.8	c	45 20.34	304 28 10.0 12.2	III	47.120	14 45 43.72	−16 34 17.96	−16 3949
2	8.9	46.4	48.4	50.4	52.3	54.6	a	45 20.36	304 28 " "	I	45.430	14 45 43.74	16 34 48.84	16 3949
3	9.1	56.8	58.8	0.9	2.8	4.6	e	45 30.94	304 28 " "	VII	47.390	14 45 54.32	16 34 15.21	16 3950
4	8.7	30.7	32.8	35.0	37.2	39.3	c	57 35.00	304(50) 10.0 11.1	III	48.045	14 57 58.35	16 11 56.47	16 3992
5	9.7	8.9	11.0	13.1	15.3	17.3	c	24 13.12	304 42 10.0 13.0	III B	42.440	15 24 36.50	16 24 48.99	16 4098
6	10.0	58.8	1.0	3.0	5.1	6.9	e	47 33.21	305 6 10.0 10.7	V	46.020	15 47 56.55	15 56 21.14	15 4208
7	8.7	6.2	8.4	10.5	12.7	14.9	c	8 10.54	304 46 10.0 11.4	III	42.990	16 8 33.90	16 17 11.73	16 4252
8	9.4	50.4	52.5	54.2	56.1	58.3	a	18 24.08	305 30 10.0 11.4	I	45.340	16 18 47.38	15 32 19.63	15 4318
9	8.9	26.3	28.5	30.6	32.9	35.1	c	18 30.68	305 16 10.0 11.4	III	43.210	16 18 54.01	15 47 2.64	15 4319
10	9.1	33.8	36.0	38.1	40.4	42.5	c	22 38.16	305 50 10.0 11.4	III	46.840	16 23 1.42	−15 11 50.01	−15 4325

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
11	8.9	53.3	55.4	57.5	59.8	1.9	c	27 57.58	305 48 10.0 11.6	III B 40.580	16 28 20.85	−15 19 1.58	−15 4340
12	9.0	21.6	23.6	25.4	27.2	29.6	a	29 55.22	305 48 " "	I A 40.190	16 30 18.48	15 12 38.04	15 4348
13	9.1	55.2	57.3	59.5	1.7	3.8	c	29 59.50	305 10 10.0 11.6	V 43.660	16 30 22.83	15 52 51.55	15 4349
14	9.1	54.0	56.0	57.7	59.7	1.9	a	31 27.74	304 52 10.0 11.8	I 44.340	16 31 51.10	16 10 35.86	16 4316
15	8.4	24.7	26.9	29.0	31.3	33.5	c	31 29.08	304 24 10.0 11.7	V 43.825	16 31 52.47	16 38 50.01	16 4317
16	9.0	52.7	54.8	56.5	58.6	0.7	a	34 26.43	305 38 10.0 11.8	I B 45.060	16 34 49.71	15 27 31.95	15 4365
17	9.1	33.2	35.3	37.3	39.7	41.8	c	34 37.46	305 38 " "	III A 41.830	16 35 0.73	15 22 6.96	15 4366
18	8.7	23.8	26.1	28.1	30.0	31.8	e	34 58.32	305 52 10.0 12.0	VII 47.190	16 35 21.57	15 9 41.12	15 4369
19	9.7	13.2	15.5	17.7	20.0	22.1	c	40 17.70	305 44 10.0 11.8	III 41.900	16 40 40.97	15 19 18.72	15 4388
20	8.0	20.9	22.8	24.7	26.5	28.8	a	41 54.56	305 16 10.0 12.0	I 42.955	16 42 17.88	−15 46 56.56	−15 4392
21	8.3	17.1	19.2	21.4	23.7	25.9	c	42 21.46	304 52 10.0 11.7	III 49.390	16 42 44.80	−16 8 56.72	−16 4350
22	9.0	15.7	17.8	19.9	22.1	24.3	c	43 19.96	304 52 " "	III B 41.610	16 43 43.32	16 14 38.98	16 4354
23	8.7	53.9	56.0	58.2	0.4	2.5	c	43 58.20	305 46 10.0 12.1	V 48.520	16 44 21.55	15 15 11.48	15 4397
24	8.0	42.9	45.1	47.1	49.4	51.5	c	44 47.20	304 40 10.0 11.9	V 44.680	16 45 10.56	16 22 28.09	16 4360
25	9.1	29.4	31.6	33.8	36.0	38.1	c	46 33.78	305 4 10.0 12.3	III 44.215	16 46 57.10	15 58 33.70	15 4403
26	9.2	43.7	46.0	48.2	50.2	52.5	c	46 48.12	305 4 " "	V B 44.200	16 47 11.44	16 1 48.72	15 4405
27	7.8	18.1	20.2	22.0	23.8	26.3	a	49 52.03	304 24 10.0 11.3	I 43.350	16 50 15.42	16 38 49.97	16 4371
28	9.1	0.3	1.8	6.1	8.3	10.5	b_2 c_3	50 10.41	305 46 10.0 12.0	III A 48.480	16 50 33.66	15 11 53.35	15 4409
29	9.0	16.3	18.6	20.6	22.8	24.8	c	50 20.62	305 46 " "	V B 44.780	16 50 43.88	15 19 34.52	15 4410
30	9.3	47.7	49.9	52.2	56.4	57.9	c_3 d_2	50 47.79	305 46 " "	V C 46.320	16 51 11.05	−15 22 17.30	−15 4414
31	8.2	11.3	13.5	15.6	17.7	19.9	c	53 15.60	305 4 10.0 11.7	III A 46.040	16 53 38.92	−15 54 41.16	−15 4421
32	9.2	50.0	52.3	54.4	56.6	58.8	c	53 54.42	305 4 " "	III 43.250	16 54 17.74	15 58 49.86	15 4424
33	9.4	48.0	50.1	52.2	54.5	56.6	c	54 52.28	305 4 " "	III C 49.210	16 55 15.60	16 3 21.32	15 4427
34	9.3	12.2	14.4	16.7	18.8	20.8	c	56 16.58	305 4 " "	III B 48.330	16 56 39.90	16 0 24.83	15 4431
35	9.4	55.5	57.7	59.7	2.0	4.2	c	56 59.82	305 18 10.0 11.7	III 46.640	16 57 23.12	15 43 43.05	15 4435
36	8.7	28.4	30.5	32.6	34.8	37.0	c	57 32.66	305 18 " "	III 47.545	16 57 55.96	15 43 25.49	15 4438
37	9.2	19.0	21.2	23.4	25.6	27.7	c	58 23.38	304 24 10.0 11.4	III 46.670	16 58 46.76	16 37 44.72	16 4410
38	9.1	56.3	58.6	0.6	2.4	4.4	e	58 30.59	304 24 " "	V B 40.720	16 58 53.98	16 42 53.70	16 4412
39	9.2	41.3	43.4	45.6	47.8	50.0	c	0 45.62	304 46 10.0 11.7	III B 48.085	17 1 8.98	16 18 28.78	16 4416
40	9.1	54.9	57.0	59.1	1.3	3.5	c	0 59.16	304 46 " "	V 47.620	17 1 22.50	−16 15 25.68	−16 4420
41	9.1	44.8	47.0	49.0	51.1	53.3	c	1 49.04	305 24 10.0 12.4	V 44.390	17 2 12.33	−15 38 25.21	−15 4456
42	9.4	10.7	12.9	15.0	17.2	19.3	c	3 15.02	305 24 " "	III B 42.490	17 3 38.32	15 42 13.10	15 4463
43	.....	10.8	13.0	15.2	17.3	19.5	c	4 15.16	305 24 " "	III A 41.420	17 4 38.45	15 36 4.62	15 4467
44	9.3	56.1	58.2	0.3	2.5	4.8	c	5 0.38	305 34 10.0 12.5	III B 42.820	17 5 23.66	15 32 5.63	15 4472
45	9.1	37.5	39.7	41.8	43.7	45.5	e	5 11.95	305 34 " "	V 41.060	17 5 35.22	15 29 27.41	15 4474
46	9.0	15.7	17.3	21.4	23.6	25.8	b_2 c_3	6 25.78	305 34 " "	III 42.225	17 6 49.04	15 29 3.26	15 4482
47	9.1	18.2	20.4	22.6	24.7	26.9	c	7 22.56	305 34 " "	V B 48.470	17 7 45.82	15 30 17.87	15 4486
48	7.8	55.6	57.9	59.7	1.7	3.6	e	7 30.02	305 34 " "	VII 50.390	17 7 53.28	15 26 28.65	15 4488
49	8.7	35.9	38.1	40.1	42.1	43.9	e	8 10.33	305 34 " "	V B 50.730	17 8 33.59	15 29 34.20	15 4491
50	9.3	41.9	43.9	46.0	48.2	50.3	c	9 46.06	305 34 " "	V 45.610	17 10 9.32	−15 27 58.41	−15 4495
51	9.0	35.8	37.9	40.0	41.9	43.8	e	10 10.12	305 4 10.0 13.5	VII 42.290	17 10 33.44	−15 59 4.02	−15 4501
52	8.2	26.7	28.7	30.8	33.0	35.1	c	12 30.86	305 12 10.0 12.3	V B 38.810	17 12 54.17	15 55 22.53	15 4513
53	9.1	30.7	32.8	34.8	36.8	38.5	e	13 4.99	305 12 " "	VII A 40.670	17 13 28.29	15 48 19.22	15 4515
54	9.0	1.4	3.6	5.7	7.9	10.0	c	15 5.72	305 28 10.0 12.0	III 44.140	17 15 28.99	15 34 23.87	15 4521
55	9.3	3.0	5.2	7.3	9.6	11.6	c	16 7.34	305 10 10.0 12.9	III A 42.010	17 16 30.64	15 49 49.38	15 4531
56	8.0	23.2	25.4	27.6	29.9	32.0	c	17 27.62	305 10 " "	III B 41.120	17 17 50.92	15 56 34.65	15 4534
57	9.3	26.4	28.6	30.7	32.9	35.0	c	18 30.72	305 2 10.0 11.1	III 45.270	17 18 54.04	16 0 2.62	15 4541
58	9.1	39.1	41.3	43.4	47.7	49.2	c_3 d_2	18 39.10	305 2 " "	V (B) 43.470	17 19 2.42	16 3 51.94	16 4503
59	9.1	9.7	11.9	13.9	16.1	18.3	c	20 13.98	305 2 " "	III B 41.060	17 20 37.30	16 4 36.09	16 4514
60	9.0	50.7	52.8	55.0	57.2	59.3	c	20 55.00	305 2 " "	III 43.850	17 21 18.32	−16 0 29.00	−15 4553
61	9.3	13.6	15.6	17.4	19.3	21.7	a	22 47.36	305 10 10.0 11.3	I B 42.010	17 23 10.67	−15 56 14.70	−15 4562
62	9.0	50.1	52.3	54.4	56.7	58.8	c	22 54.46	305 10 " "	III C 47.700	17 23 17.76	15 57 40.10	15 4563
63	8.9	40.9	43.0	45.2	47.5	49.7	c	23 45.26	305 10 " "	III B 42.320	17 24 8.57	15 56 10.13	15 4567
64	9.0	15.4	17.7	19.7	21.6	23.5	e	23 49.85	305 10 " "	VII A 41.695	17 24 13.15	15 49 56.27	15 4568
65	9.2	6.6	8.7	10.7	12.7	14.5	e	24 40.89	305 10 " "	VII B 47.515	17 25 4.19	15 54 32.98	15 4575
66	9.1	31.7	33.8	35.9	38.1	40.3	c	26 35.96	305 10 " "	III 46.180	17 26 59.26	15 51 41.76	15 4587
67	9.0	32.4	34.6	36.7	38.9	41.0	c	28 36.72	304 28 10.0 11.9	III 47.390	17 29 0.07	16 33 19.56	16 4554
68	8.9	21.7	23.7	25.6	27.4	29.6	a	29 55.51	304 40 10.0 11.7	I 44.220	17 30 18.84	16 22 17.88	16 4559
69	......	4.4	6.0	9.9	12.2	14.3	b_2 c_3	30 14.38	305 42 10.0 11.5	III C 48.830	17 30 37.62	15 25 14.13	15 4613
70	......	54.7	56.8	58.6	0.4	2.8	a	31 28.42	305 42 " "	I 44.520	17 31 51.65	−15 20 8.69	−15 4621
71	9.1	20.7	22.9	25.0	29.3	31.0	c_3 d_2	31 20.74	305 6 10.0 11.0	V 43.890	17 31 44.04	−15 56 25.63	−15 4620
72	9.4	15.7	17.9	20.1	22.2	24.5	c	32 20.08	305 6 " "	III B 42.710	17 32 43.38	15 59 59.88	15 4627
73	9.2	21.2	23.4	25.5	27.7	29.9	c	34 25.54	305 34 10.0 10.6	III 43.440	17 34 48.79	15 28 30.68	15 4640
74	9.0	46.0	48.2	50.0	52.2	53.9	e	36 20.31	305 8 10.0 11.3	VII B 47.100	17 36 43.60	15 56 36.80	15 4652
75	9.0	14.1	16.3	18.2	20.1	22.0	e	36 48.40	305 8 " "	VII 43.270	17 37 11.69	15 54 36.43	15 4658
76	8.9	56.3	58.5	0.7	2.9	5.0	c	40 0.68	304 28 10.0 12.0	III 48.170	17 40 24.03	16 33 0.37	16 4613
77	9.1	56.3	58.5	0.6	2.7	5.0	c	41 0.62	305 34 10.0 11.6	III 43.370	17 41 23.86	15 28 29.09	15 4679
78	9.2	47.2	49.5	51.6	53.8	56.0	c	42 51.62	304 54 10.0 12.1	III B 39.600	17 43 14.94	16 12 55.74	16 4622
79	9.3	29.5	31.6	33.7	35.9	38.0	c	43 33.74	304 54 " "	V 45.460	17 43 57.04	16 7 51.05	16 4624
80	8.8	28.7	30.9	33.1	35.4	37.4	c	44 33.10	304 54 " "	III 46.600	17 44 56.40	−16 7 27.48	−16 4629

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
81	9.5	3.6	5.9	8.0	10.3	12.2	c	46 8.00	304 44 10.0 11.0	III A 41.435	17 46 31.32	—16 15 51.69	—16 4638
82	9.4	29.0	31.4	33.4	35.8	37.9	c	46 33.50	304 44 " "	III A 41.960	17 46 56.82	16 15 41.46	16 4644
83	9.1	4.6	6.7	8.9	11.1	13.3	c	47 8.92	304 44 " "	V B 46.340	17 47 32.24	16 20 47.41	16 4647
84	9.1	37.8	39.7	41.7	43.4	45.7	a	49 11.49	305 12 10.0 11.6	I 44.730	17 49 34.77	15 49 59.53	15 4718
85	7.5	36.8	38.8	40.6	42.5	44.7	a	50 10.50	305 12 " "	I A 41.690	17 50 33.77	15 47 41.95	15 4722
86	9.1	6.7	8.9	11.0	13.3	15.4	c	50 11.06	305 12 " "	III A 40.790	17 50 34.33	15 48 0.91	15 4723
87	9.1	33.9	35.9	38.2	42.3	44.1	c_3 d_2	50 33.82	304 28 10.0 11.9	V A 40.410	17 50 57.15	16 32 11.59	16 4661
88	9.0	28.5	30.8	32.9	34.9	36.8	e	51 2.92	304 28 " "	VII B 40.610	17 51 26.26	16 38 37.66	16 4662
89	9.0	34.4	36.6	38.7	40.8	43.0	c	54 38.70	305 46 10.0 12.0	III 44.230	17 55 1.91	15 16 6.83	15 4769
90	9.0	5.0	7.2	9.3	11.5	13.6	c	55 9.32	305 46 " "	V C 47.920	17 55 32.54	—15 21 23.18	—15 4775
91	9.6	47.1	49.2	51.4	53.6	55.7	c	55 51.40	305 46 " "	V B 42.100	17 56 14.61	—15 20 2.10	—15 4780
92	9.6	58.9	1.2	3.3	5.5	7.7	c	57 3.32	305 34 10.0 12.0	V 46.160	17 57 26.54	15 27 30.81	15 4789
93	9.1	16.8	18.9	21.0	23.1	25.5	c	58 21.06	305 22 10.0 11.1	III 47.990	17 58 44.30	15 38 54.92	15 4800
94	9.0	34.3	36.5	38.6	40.9	42.9	c	58 38.64	305 22 " "	V B 46.310	17 59 1.89	15 42 41.88	15 4805
95	9.2	24.1	26.0	27.8	29.7	32.1	a	0 57.74	305 26 10.0 12.6	....	18 1 20.98	15 40 17	15 4819
96	9.1	4.0	6.1	8.3	10.6	12.7	c	1 8.34	305 26 " "	III 50.560	18 1 31.57	15 34 3.62	15 4821
97	9.2	50.1	52.3	54.5	56.7	58.7	c	2 54.46	305 26 " "	III A 44.870	18 3 17.69	15 32 36.79	15 4832
98	9.0	38.6	40.7	42.8	45.0	47.3	c	3 42.88	305 26 " "	V A 40.490	18 4 6.11	15 34 2.05	15 4842
99	8.9	1.9	3.8	5.6	7.5	9.8	a	5 35.46	305 48 10.0 11.9	I 46.460	18 5 58.66	15 13 18.46	15 4853
100	9.1	24.7	26.9	28.7	30.6	32.9	a	5 58.52	305 48 " "	I C 50.290	18 6 21.72	—15 18 31.17	—15 4859
101	9.0	43.1	45.1	47.0	48.8	51.2	a	6 16.78	305 48 " "	III 50.540	18 6 39.97	—15 12 1.43	—15 4862
102	8.6	15.6	17.6	19.4	21.4	23.6	a	6 49.26	305 48 " "	III 47.450	18 7 12.46	15 13 0.53	15 4868
103	8.8	58.2	0.3	2.0	4.0	6.3	a	9 32.00	305 2 10.0 11.7	III A 48.390	18 9 55.27	15 55 28.46	15 4896
104	9.4	37.6	39.6	41.8	44.1	46.3	c	9 41.88	305 2 " "	V A 47.220	18 10 5.15	15 55 52.34	15 4897
105	9.3	4.3	6.4	8.6	10.8	12.9	c	11 8.60	305 2 " "	III C 44.650	18 11 31.88	16 6 21.22	16 4791
106	9.0	29.0	31.1	33.3	35.5	37.6	c	12 33.30	305 48 10.0 12.0	III 44.880	18 12 56.48	15 13 47.72	15 4918
107	8.9	7.4	9.5	11.6	13.8	15.9	c	14 11.64	305 48 " "	III B 48.930	18 14 34.83	15 15 42.67	15 4929
108	8.0	51.0	53.1	55.3	57.5	59.7	c	14 55.32	305 48 " "	III B 46.515	18 15 18.51	15 16 28.74	15 4938
109	9.0	57.9	0.0	2.2	4.4	6.4	c	17 2.18	305 22 10.0 11.1	III 45.560	18 17 25.41	15 39 34.73	15 4952
110	9.0	27.8	30.0	32.0	34.3	36.4	c	18 32.10	305 34 10.0 11.2	III 48.220	18 18 55.30	—15 26 42.51	—15 4959
111	8.8	55.3	57.6	59.7	2.0	4.1	c	19 59.74	305 2 10.0 11.5	III 45.680	18 20 23.00	—15 59 32.14	—16 4871
112	8.6	19.5	21.7	23.7	26.0	28.1	c	21 23.80	305 36 10.0 11.5	III 43.890	18 21 47.00	15 26 4.32	15 4972
113	9.0	10.0	12.3	14.5	16.7	18.8	c	22 14.46	304 20 10.0 11.7	III B 42.500	18 22 37.79	16 45 47.69	16 4888
114	8.8	23.0	25.2	27.4	29.6	31.8	c	23 27.40	304 20 " "	III 43.040	18 23 50.72	16 42 23.61	16 4900
115	9.4	35.6	38.1	40.0	42.2	44.4	c	23 40.06	304 20 " "	V B 39.340	18 24 3.39	16 46 49.39	16 4902
116	9.0	17.6	19.7	21.8	24.1	26.3	c	24 21.90	304 20 " "	V 43.920	18 24 45.22	16 42 7.73	16 4905
117	9.0	44.2	46.4	48.5	50.8	52.9	c	24 48.56	304 20 " "	V A 45.125	18 25 11.87	16 38 29.20	16 4907
118	8.2	47.4	49.6	51.7	54.0	56.0	c	26 51.74	304 28 10.0 12.0	III B 41.780	18 27 15.05	16 37 59.30	16 4922
119	8.8	53.5	55.7	57.8	0.1	2.3	c	27 57.88	304 28 " "	III 42.440	18 28 21.18	—16 34 32.95	—16 4932

Reduction Elements. Zone 123.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 18.3....	—0.075	—0.218	—0.294	—0.064	—0.214	—0.294
18.5....	—0.053	—0.209	—0.295			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	μ Virginis		ι Librae		β Librae		32 Librae		ο Serpentis		ν Ophiuchi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	315 50 11.50		301 38 10.75		312 2 11.20		304 42 11.50		308 12 11.60		311 16 11.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42.510	4 49.94	45.660	5 50.85	44.080	5 20.15	40.900	4 19.58		6 10.36		5 35.25
II Red. to Mer......	.555	0.05	.690	0.19	.130	0.09	.960	0.16	46.690	0.11	44.860	0.08
VI Inclination	.660		.875		.240		41.095		.825	—0.67	45.025	—0.67
VII Refraction	.690	53.8	.895	1 29.8	.270	1 1.6	.130	1 20.2	.880	1 11.0	.015	1 3.8

	μ Sagittarii		Bradley 2329	
	° ′ ″		° ′ ″	
CIRCLE READING.	299 58 10.55		309 58 11.80	
	r	′ ″	r	′ ″
I Microm. Eq......		4 39.04		5 45.29
II Red. to Mer. ...		0.21	45.380	0.10
VI Inclination	42.000	—1.68	.530	—0.67
VII Refraction	.073	1 36.9	.560	1 6.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
μ Virginis	14 37 24.75	11	−0.42	+9.77	315 54 7.7	28.9
47 H. Cephei S. P	14 51 55.65	11	−0.50	[+9.78]	62 2	....
ι Librae	15 6 7.54	11	−0.45	+9.77	301 42 32.0	29.3
β Librae	15 11 14.75	11	−0.43	+9.75	312 6 29.8	28.8
32 Librae	15 22 13.49	11	−0.45	+9.83	304 45 11.0	28.8
Groombridge 750 S. P	16 3 21.26	11	−0.72	[+9.74]	55 46	....
ο Serpentis	17 35 24.71	11	−0.44	+9.66	308 17 10.4	28.4
ν Ophiuchi	17 53 8.59	11	−0.43	+9.73	311 20 41.9	28.4
μ Sagittarii	18 7 23.12	8	−0.46	+9.74	300 1 11.2	28.6
Bradley 2329	18 29 6.15	11	−0.44	+9.67	310 2 49.7	27.8

15.070^h .... *dt* .... +9.780^s

Hourly rate .... −0.0271

Adopted Equator Point .... 321° 6′ 28.62″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 35	29.894	73.5	72.1
15 33	29.884	71.4	70.1
16 35	29.866	69.1	67.8
17 40	29.852	68.2	66.2
18 30	29.850	67.0	65.8

Notes.

6. Bright wire illumination.

β Librae. Images good.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0			$D=$ Z. D. N. to 1895.0			R		
			304°	305°	306°	304°	305°	306°	304°	305°	306°
°	s	h m	s	s	s	″	″	″	″	″	″
304	−0.447	14 30	+14.068	+13.995	+13.922	+18.52	+18.26	+18.00	82.22	79.21	76.37
305	0.445	15 0	14.099	14.017	13.934	17.88	17.65	17.42	82.38	79.36	76.51
306	−0.442	15 30	14.123	14.032	13.941	16.94	16.74	16.55	82.55	79.52	76.66
		16 0	14.139	14.042	13.945	15.71	15.55	15.39	82.70	79.67	76.81
		16 30	14.151	14.047	13.945	14.22	14.10	13.98	82.87	79.84	76.97
		17 0	14.152	14.047	13.943	12.49	12.42	12.35	83.00	79.96	77.09
		17 30	14.146	14.041	13.935	10.57	10.54	10.51	83.14	80.09	77.22
		18 0	14.134	14.029	13.923	8.45	8.47	8.48	83.18	80.13	77.25
		18 30	+14.114	+14.011	+13.907	+ 6.20	+ 6.26	+ 6.32	83.20	80.15	77.27

1895 JUNE 22. ZONE 124. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.6	21.8	23.9	26.0	28.2	30.3	c	26 26.04	303 38 10.0 10.9	III	41.160	14 26 48.73	−17 26 20.42	−17 4110
2	9.3	48.1	50.1	52.2	54.5	56.6	c	35 52.30	304 10 10.0 10.6	III A	41.075	14 36 14.95	16 51 3.02	16 3917
3	9.1	22.9	24.9	27.2	29.5	31.5	c	36 27.20	304 10 " "	III	44.625	14 36 49.87	16 53 10.12	16 3919
4	9.2	4.0	6.0	8.1	10.3	12.6	c	37 8.20	304 10 " "	III	44.760	14 37 30.87	16 53 7.34	16 3924
5	9.3	11.7	13.8	15.9	18.1	20.3	c	44 15.96	303 12 10.0 10.5	III B	46.350	14 44 38.71	17 53 50.97	17 4187
6	9.1	19.4	21.6	23.8	26.0	28.1	c	45 23.78	303 12 " "	III A	45.180	14 45 46.52	17 47 44.55	17 4192
7	8.0	47.5	49.7	51.8	53.9	56.2	c	45 51.82	303 12 " "	III C	47.790	14 46 14.58	17 56 35.92	17 4200
8	9.0	34.7	36.9	39.2	41.4	43.6	c	54 39.16	303 0 10.0 10.5	III	45.200	14 55 1.93	18 2 57.66	17 4233
9	8.2	2.0	4.3	6.4	8.7	10.7	c	57 6.42	303 48 10.0 10.0	III	47.050	14 57 29.13	17 14 19.44	17 4243
10	9.2	48.7	50.9	53.0	55.0	57.3	c	58 52.98	302 48 10.0 9.8	III A	44.800	14 59 15.77	−18 11 49.75	−18 3965
11	9.0	13.5	15.8	17.9	20.0	22.3	c	59 17.90	302 48 " "	III	47.575	14 59 40.69	−18 14 11.75	−18 3969
12	8.9	13.9	16.1	18.3	20.5	22.6	c	3 18.28	303 26 10.0 9.7	III	42.330	15 3 41.03	17 37 49.49	17 4259
13	8.8	5.7	7.9	10.0	12.2	14.4	c	4 10.04	303 26 " "	III B	43.890	15 4 32.79	17 40 32.59	17 4263
14	9.3	57.9	0.0	2.2	4.4	6.4	c	6 2.18	303 18 10.0 9.8	III B	42.410	15 6 24.94	17 49 0.79	17 4272
15	8.0	19.6	21.8	24.0	26.2	28.3	c	6 23.98	303 18 " "	V A	41.660	15 6 46.73	17 42 47.91	17 4273
16	9.4	39.0	41.0	43.3	45.5	47.8	c	7 43.32	303 18 " "	III C	45.875	15 8 6.09	17 51 6.73	17 4280
17	8.0	28.0	30.2	32.3	34.6	36.8	c	8 32.38	303 40 10.0 10.3	III	42.580	15 8 55.11	17 23 42.21	17 4285
18	8.7	54.6	56.8	58.9	1.3	3.4	c	14 59.00	302 46 10.0 10.0	III	42.450	15 15 21.81	18 17 45.65	18 4043
19	9.3	12.4	14.7	16.8	19.0	21.2	c	18 16.82	304 6 10.0 9.5	III	43.250	15 18 39.52	16 57 25.69	16 4074
20	8.8	14.3	16.4	18.5	20.8	23.0	c	20 18.60	303 24 9.0 9.2	III	44.770	15 20 41.36	−17 38 58.57	−17 4330
21	9.2	39.1	41.4	43.5	45.7	47.9	c	20 43.52	303 24 " "	III	45.060	15 21 6.28	−17 38 52.87	−17 4335
22	9.0	38.9	41.1	43.2	45.6	47.7	c	21 43.30	(304) 14 9.5 9.3	III	46.770	15 22 5.99	16 48 17.10	16 4087
23	9.1	48.8	51.0	53.0	55.4	57.5	c	23 53.14	302 58 9.2 8.9	III	42.675	15 24 15.94	18 5 39.04	17 4344
24	8.4	53.2	55.4	57.5	59.8	2.0	c	26 57.58	304 14 10.0 9.5	III C	47.400	15 27 20.28	16 54 29.28	16 4111
25	7.8	52.5	54.8	56.9	59.1	1.3	c	28 56.92	304 14 " "	III	46.900	15 29 19.61	16 48 12.06	16 4114
26	8.7	59.9	1.8	3.8	5.6	8.1	a	30 33.79	304 22 10.0 9.4	I	44.560	15 30 56.47	16 40 54.62	16 4120
27	9.2	3.3	5.4	7.6	9.9	11.9	c	31 7.62	303 22 10.0 9.6	III	40.360	15 31 30.39	−17 42 19.36	−17 4380

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
28	9.4	8.4	10.6	12.7	14.8	17.0	c	32 12.70	303 48 10.0 9.3	III 47.910	15 32 35.43	−17 13 53.01	−17 4385
29	8.0	33.2	35.3	37.5	39.7	41.9	c	32 37.52	303 48 " "	V C 48.420	15 33 0.26	17 20 10.48	17 4388
30	9.0	23.6	26.0	27.9	29.9	31.6	e	32 57.93	304 18 10.0 10.5	VII 45.840	15 33 20.61	−16 44 32.97	−16 4129
31	9.2	13.0	15.2	17.4	19.6	21.7	c	34 17.38	303 16 10.0 9.7	V C 42.915	15 34 40.17	−17 53 56.95	−17 4396
32	9.0	54.1	56.2	58.3	0.3	2.0	e	34 28.15	303 16 " "	VII A 44.900	15 34 50.92	17 43 38.85	17 4399
33	8.6	27.0	29.1	31.3	33.7	36.0	c	36 31.42	302 46 10.0 9.5	III 43.860	15 36 54.25	18 17 12.38	18 4136
34	9.0	0.0	2.2	4.3	6.6	8.8	c	41 4.38	302 52 10.0 9.7	III 48.580	15 41 27.20	18 9 39.93	18 4164
35	9.0	10.5	12.5	14.7	16.9	19.2	c	42 14.76	302 52 " "	III A 44.240	15 42 37.58	18 7 47.47	17 4427
36	8.0	12.0	14.0	16.0	17.9	20.2	a	43 46.12	303 28 10.0 10.1	I 41.700	15 44 8.89	17 35 47.60	17 4431
37	9.3	17.9	20.1	22.1	24.5	26.7	c	44 22.26	303 48 10.5 10.8	III B 50.100	15 44 44.99	17 16 19.47	17 4436
38	......	44.3	46.5	48.5	50.5	52.4	e	46 18.54	304 8 10.3 10.3	VII 41.130	15 46 41.24	16 55 59.59	16 4169
39	9.0	20.6	22.5	24.4	26.3	28.8	a	49 54.68	303 4 9.2 9.0	I 47.350	15 50 17.49	17 57 59.34	17 4452
40	9.3	58.0	0.4	2.5	4.7	7.0	c	50 2.52	303 4 " "	III B 41.325	15 50 25.34	−18 3 9.78	−17 4453
41	9.3	40.4	42.6	44.2	46.4	48.7	a	52 14.66	302 52 10.0 9.4	I 43.250	15 52 37.50	−18 11 17.28	−18 4209
42	9.0	15.5	17.7	19.8	22.2	24.4	c	52 19.92	303 36 10.0 10.0	V 42.500	15 52 42.69	17 27 32.04	17 4461
43	8.9	26.4	28.5	30.6	33.0	35.1	c	56 30.72	303 8 10.0 10.0	III 48.550	15 56 53.53	17 53 34.64	17 4472
44	8.6	5.5	7.7	9.8	12.1	14.3	c	57 9.88	303 8 " "	III C 50.090	15 57 32.70	17 59 31.12	17 4478
45	9.3	33.0	35.4	37.4	39.5	41.2	■	1 7.28	303 26 10.0 11.2	VII B 44.845	16 1 30.07	17 39 58.88	17 4491
46	8.5	......	......	10.1	12.2	14.2	c	1 9.99	303 26 " "	V 46.140	16 1 32.77	17 36 19.18	17 4492
47	9.1	43.0	45.2	47.1	48.9	51.3	a	3 17.11	304 2 10.0 9.2	I B 41.040	16 3 39.84	17 5 5.82	16 4228
48	......	14.4	16.6	18.7	21.0	23.1	c	3 18.76	304 2 " "	V 47.990	16 3 41.48	16 59 42.06	16 4229
49	7.0	46.8	48.9	51.0	55.5	57.1	$c_3 d_2$	3 46.76	302 58 10.0 9.5	V 45.590	16 4 9.59	18 4 31.14	17 4502
50	8.8	3.0	5.3	7.4	9.6	11.8	c	5 7.42	303 16 10.4 11.0	III C 50.500	16 5 30.23	−17 51 19.47	−17 4508
51	9.1	20.4	22.6	24.7	27.0	29.2	c	5 24.78	303 16 " "	V 52.190	16 5 47.58	−17 44 22.08	17 4510
52	9.0	42.4	44.4	46.6	48.8	51.0	c	7 46.64	303 34 10.0 10.0	III 43.920	16 8 9.41	17 28 58.46	17 4516
53	8.0	25.7	27.9	30.0	32.3	34.5	c	8 30.08	302 46 10.0 10.3	III 44.750	16 8 52.93	18 16 44.54	18 4249
54	9.1	58.1	0.3	2.5	4.6	6.6	c	13 2.42	304 20 10.8 11.7	III B 41.490	16 13 25.12	16 46 53.10	16 4267
55	8.9	24.9	27.1	29.3	31.5	33.6	c	13 29.28	304 20 " "	III A 41.495	16 13 51.97	16 40 24.20	16 4268
56	8.8	23.2	25.4	27.5	29.7	31.9	c	14 27.54	304 12 10.0 10.4	V 45.275	16 14 50.25	16 50 29.50	16 4273
57	8.8	28.8	31.0	33.2	35.5	37.6	c	18 33.22	303 42 10.0 10.4	III • 47.660	16 18 55.98	17 19 42.43	17 4563
58	......	46.4	48.6	50.7	53.0	55.1	c	20 50.76	302 50 10.0 11.0	III 41.250	16 21 13.61	18 13 46.98	18 4282
59	9.3	40.0	42.2	44.4	46.6	48.8	c	21 44.40	303 48 10.0 10.6	III B 43.060	16 22 7.15	17 18 22.50	17 4574
60	9.1	31.9	34.0	36.2	38.5	40.6	c	22 36.24	303 48 " "	III 42.740	16 22 58.99	−17 15 15.05	17 4581
61	9.1	24.6	26.9	29.1	31.4	33.6	c	23 29.12	303 0 10.0 10.8	III 49.410	16 23 51.94	−18 1 9.04	−17 4585
62	9.2	10.4	12.5	14.8	16.9	19.2	c	24 14.76	303 0 " "	III C 50.950	16 24 37.60	18 7 5.42	18 4288
63	8.6	25.2	27.4	29.5	31.7	33.8	c	25 29.52	303 32 10.4 11.6	III 47.130	16 25 52.29	17 29 49.88	17 4591
64	8.6	18.3	20.3	22.1	24.1	26.4	a	30 52.23	304 6 10.0 10.7	I 42.190	16 31 14.95	16 57 20.25	16 4315
65	9.3	9.1	11.3	13.4	15.7	17.9	c	31 13.48	303 46 10.4 11.8	III 48.520	16 31 36.23	17 15 20.42	17 4604
66	7.8	3.2	5.3	7.5	9.8	12.0	c	35 7.56	303 10 9.0 9.0	III 47.000	16 35 30.37	17 51 52.13	17 4616
67	8.7	51.8	53.9	55.9	57.9	59.8	e	35 25.99	304 16 11.0 12.6	VII 51.465	16 35 48.68	16 44 22.71	16 4327
68	9.0	36.1	38.1	40.2	42.2	44.1	e	36 10.25	304 16 " "	VII B 43.890	16 36 32.95	16 50 1.52	16 4332
69	9.3	29.4	31.6	33.7	36.0	38.0	c	37 33.74	303 46 10.0 11.0	V B 45.340	16 37 56.49	17 19 34.66	17 4623
70	9.0	58.2	0.5	2.6	4.9	6.9	c	38 2.62	303 46 " "	V 48.825	16 38 25.37	−17 15 14.11	−17 4626
71	9.0	52.7	54.9	57.0	59.3	1.6	c	39 57.10	304 20 10.3 11.8	III 42.990	16 40 19.79	−16 43 1.86	−16 4344
72	9.3	23.9	26.0	28.3	30.6	32.6	c	40 28.28	304 20 " "	III 44.460	16 40 50.97	16 42 33.49	16 4347
73	9.3	41.4	43.6	45.7	47.9	50.1	c	42 45.74	303 4 10.0 11.0	III A 43.280	16 43 8.55	17 55 44.24	17 4637
74	9.0	30.9	33.2	35.3	37.6	39.7	c	43 35.34	303 4 " "	III C 44.150	16 43 58.17	18 5 8.87	18 4332
75	9.1	52.6	54.8	56.8	59.3	1.3	c	43 56.96	303 4 " "	V 48.870	16 44 19.78	17 57 13.26	17 4641
76	8.9	8.3	10.6	12.6	14.8	17.1	c	45 12.68	303 20 10.0 10.5	III B 43.620	16 45 35.48	17 46 4.99	17 4643
77	8.4	41.3	43.4	45.5	47.8	50.0	c	47 45.60	303 20 " "	III C 45.630	16 48 8.40	17 48 38.41	17 4646
78	8.8	44.9	47.0	49.1	51.4	53.6	c	49 49.20	303 20 " "	III B 47.780	16 50 11.99	17 44 43.49	17 4659
79	9.0	21.4	23.6	25.4	27.2	29.7	a	50 55.59	303 20 " "	III B 43.155	16 51 18.39	17 46 11.88	17 4665
80	8.9	53.0	55.2	57.4	59.7	1.8	c	50 57.42	303 20 " "	V A 44.130	16 51 20.20	−17 39 25.96	−17 4667
81	9.0	59.1	1.1	3.2	5.5	7.6	c	52 3.30	303 20 " "	III 45.720	16 52 26.09	−17 42 8.94	−17 4671
82	9.1	15.8	18.0	20.3	22.3	24.5	c	52 20.18	302 56 9.2 9.6	V B 45.590	16 52 43.02	18 12 40.84	18 4367
83	7.5	27.7	29.8	32.0	34.3	36.4	c	53 32.04	302 56 " "	III 47.610	16 53 54.87	18 5 34.23	18 4372
84	9.1	57.7	0.0	2.1	4.4	6.5	c	54 2.14	302 56 " "	III A 42.950	16 54 24.97	18 3 49.07	17 4677
85	8.7	27.3	29.3	31.0	33.0	35.3	a	55 1.22	303 52 10.0 11.6	III B 50.430	16 55 23.96	17 11 48.64	17 4685
86	8.8	44.5	46.5	48.5	50.4	52.3	e	58 18.47	303 48 10.0 11.2	VII C 44.640	16 58 41.22	17 20 54.01	17 4700
87	9.1	59.6	1.9	4.0	6.4	8.4	c	0 4.06	303 14 9.5 10.0	V 44.510	17 0 26.87	17 48 31.46	17 4709
88	7.0	59.2	1.4	3.7	5.7	7.9	c	2 3.58	303 34 10.0 10.8	III 44.100	17 2 26.35	17 28 35.61	17 4717
89	9.0	49.0	51.2	53.3	55.6	57.7	c	2 53.36	303 34 " "	III A 40.840	17 3 16.13	17 26 22.48	17 4724
90	9.2	12.4	14.4	16.4	18.6	20.9	c	6 16.54	303 8 10.0 10.8	III (C) 44.470	17 6 39.37	−18 0 54.56	−17 4743
91	9.1	24.4	26.8	29.0	33.4	34.9	$c_3 d_2$	6 24.61	303 8 " "	V A 42.240	17 6 47.42	−17 51 57.18	−17 4745
92	9.0	2.5	4.8	6.9	9.1	11.4	c	8 6.94	303 58 10.0 11.3	III 44.475	17 8 29.67	17 4 24.79	17 4752
93	8.5	22.6	24.7	26.9	29.0	31.3	c	9 26.90	303 58 " "	III B 47.000	17 9 49.63	17 6 49.12	17 4755
94	9.2	27.6	29.8	32.1	34.2	36.3	c	10 32.00	303 58 " "	III A 40.260	17 10 54.72	17 2 29.41	16 4463
95	9.3	16.4	18.8	20.7	23.0	25.2	c	11 20.82	303 20 10.0 11.1	V B 44.520	17 11 43.62	17 45 39.61	17 4763
96	9.2	54.2	56.3	58.4	0.3	2.3	e	11 28.27	303 20 " "	VII 42.230	17 11 51.06	17 43 11.12	17 4764
97	9.1	58.9	1.2	3.4	5.6	7.8	c	13 3.38	303 20 " "	III 42.820	17 13 26.17	17 42 56.77	17 4769
98	9.3	29.9	32.0	34.3	36.6	38.8	c	13 34.32	303 20 " "	III 45.510	17 13 57.11	17 42 4.97	17 4772
99	7.0	7.1	9.5	11.4	13.3	15.1	e	13 41.26	303 20 " "	V (A) 44.700	17 14 4.04	17 39 6.56	17 4773
100	9.2	56.3	58.5	0.7	3.0	5.1	c	15 0.72	303 6 10.0 10.9	V 45.530	17 15 23.53	−17 56 6.23	−17 4782

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
101	9.3	28.8	31.1	33.1	35.0	37.0	e	15 2.93	303 6 10.0 10.9	VII	43.220	17 15 25.74	−17 56 51.66	−17 4783
102	9.3	32.9	35.0	37.2	39.4	41.6	c	16 37.22	302 58 10.0 10.9	III	41.150	17 17 0.05	18 5 28.77	18 4509
103	9.1	52.2	54.3	56.4	58.8	0.9	c	16 56.52	302 58 " "	V A	44.340	17 17 19.34	18 1 13.53	17 4792
104	9.0	1.1	3.4	5.7	7.8	10.0	c	18 5.60	302 58 " "	III A	40.570	17 18 28.42	18 2 24.00	17 4797
105	9.0	2.7	4.8	6.8	9.0	11.3	c	19 6.92	302 58 " "	III C	42.570	17 19 29.76	18 11 26.85	18 4524
106	8.8	57.4	59.5	1.8	4.0	6.1	c	20 1.76	304 2 10.0 10.4	III	46.980	17 20 24.47	16 59 32.64	16 4512
107	9.1	17.0	19.2	21.5	23.6	25.8	c	22 21.42	302 50 10.0 12.0	III	43.030	17 22 44.26	18 12 50.53	18 4536
108	9.1	28.4	30.6	32.7	35.0	37.1	c	23 32.76	303 36 10.0 12.0	III B	40.800	17 23 55.52	17 30 43.79	17 4822
109	9.0	11.7	13.9	16.0	18.3	20.3	c	24 16.04	303 36 " "	III A	42.525	17 24 38.79	17 23 41.73	17 4828
110	8.4	41.4	43.5	45.8	48.0	50.0	c	24 45.74	303 44 10.0 11.0	V	46.430	17 25 8.48	−17 17 43.43	−17 4831
111	9.4	37.7	40.0	42.0	44.3	46.6	c	25 42.12	303 44 " "	V A	44.960	17 26 4.85	−17 14 56.07	−17 4838
112	8.0	42.8	45.0	47.2	49.4	51.6	c	26 47.20	303 44 " "	III C	42.310	17 27 9.95	17 25 26.64	17 4841
113	9.2	8.1	10.3	12.4	14.7	16.9	c	27 12.48	303 44 " "	V A	48.260	17 27 35.21	17 13 52.21	17 4844
114	9.2	57.5	59.7	1.8	4.0	6.2	c	28 1.84	303 44 " "	III A	44.440	17 28 24.57	17 15 3.75	17 4850
115	9.3	19.4	21.0	23.2	25.0	27.2	a	29 53.20	303 44 " "	I A	46.240	17 30 15.93	17 14 26.82	17 4856
116	9.0	9.3	11.2	13.3	15.2	17.6	■	30 43.51	302 54 10.0 11.6	I	47.870	17 31 6.33	18 7 13.04	18 4585
117	9.0	49.1	51.3	53.4	55.7	57.8	c	32 53.46	303 36 10.0 12.2	III A	43.550	17 33 16.21	17 23 18.86	17 4871
118	9.4	52.0	54.2	56.2	58.5	0.7	c	33 56.32	303 36 " "	III C	47.070	17 34 19.08	17 31 52.50	17 4880
119	9.4	1.4	3.6	5.6	7.8	10.0	c	35 5.68	303 12 9.5 10.7	III B	42.060	17 35 28.48	17 54 17.59	17 4886
120	9.1	35.0	37.1	39.2	41.5	43.6	c	35 39.28	303 12 " "	III B	43.190	17 36 2.08	−17 53 55.69	−17 4892
121	9.3	12.2	14.5	16.8	18.7	20.5	e	35 46.50	303 12 " "	V A	42.460	17 36 9.29	−17 47 42.46	−17 4893
122	9.4	32.9	35.1	37.3	39.4	41.6	c	36 37.26	303 12 " "	V B	42.920	17 37 0.05	17 54 2.06	17 4895
123	8.9	10.7	12.8	14.9	17.2	19.3	c	38 14.98	303 54 10.0 11.3	III A	41.200	17 38 37.69	17 6 1.55	17 4907
124	9.0	40.3	42.6	44.7	46.8	49.0	c	38 44.68	303 54 " "	III B	45.920	17 39 7.40	17 10 59.47	17 4910
125	9.2	0.5	2.7	4.9	7.0	9.2	c	39 4.86	303 54 " "	V B	44.050	17 39 27.58	17 11 36.77	17 4912
126	9.1	28.8	30.9	33.0	35.4	37.6	c	40 33.14	304 8 10.0 12.2	III	43.460	17 40 55.83	16 54 31.58	16 4614
127	9.3	6.2	8.5	10.6	12.9	15.0	c	42 10.64	303 46 10.5 12.4	III	46.150	17 42 33.36	17 15 40.11	17 4923
128	9.0	39.2	41.4	43.5	45.7	47.7	c	43 43.50	303 46 " "	III	42.170	17 44 6.23	17 16 55.95	17 4928
129	9.0	40.9	43.1	45.2	47.3	49.5	c	44 45.20	303 46 " "	III A	42.300	17 45 7.92	17 13 37.66	17 4932
130	8.6	4.8	6.9	9.0	11.4	13.4	c	46 9.10	304 (6) 10.0 11.1	III	43.280	17 46 31.79	−16 56 33.64	−16 4639
131	8.9	0.7	2.8	4.9	7.2	9.4	c	47 5.00	303 38 10.0 11.6	III B	43.830	17 47 27.74	−17 27 37.23	−17 4941
132	9.0	42.5	44.8	46.9	49.1	51.3	c	47 46.92	303 38 " "	III	46.850	17 48 9.65	17 23 25.72	17 4946
133	9.3	·52.4	54.5	56.8	59.0	1.0	c	50 56.74	302 56 9.0 10.0	V (A)	39.710	17 51 19.55	18 4 31.20	18 4715
134	9.3	51.7	53.2	57.4	59.7	1.9	$b_2 c_3$	52 1 88	302 56 " "	III B	43.670	17 52 24.69	−18 9 42.01	−18 4740

Reduction Elements. Zone 124.

1895.	OBSERVED. c	b	a	ADOPTED. c	b	a
	s	s	s	s	s	s
June 22.3....	−0.109	−0.208	−0.126	−0.096	−0.200	−0.168
22.5....	−0.084	−0.193	−0.211			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	40 H. Virginis		κ Virginis		ι2 Librae		Mayer 575		η Ophiuchi		ξ Serpentis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	305 14 10.20		311 14 10.30		309 48 10.70		301 4 9.50		305 26 10.45		305 42 11.05	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......		4 58.00	46.150	5 59.67	43.230	5 3.65	42.450	4 49.25	45.260	5 43.52	44.510	5 28.88
II Red. to Mer......	42.875	0.14	.150	0.10	.260	0.11	.525	0.20	.345	0.15	.575	0.15
VI Inclination	43.085	−0.67	.325		.380		.650		.495		.710	
VII Refraction.......	.115	1 17.8	.340	1 2.7	.405	1 6.1	.645	1 31.3	.490	1 17.7	.745	1 17.0

	Mayer 703		ν Ophiuchi	
	° ′ ″		° ′ ″	
CIRCLE READING.	302 16 10.30		311 16 12.45	
	r	′ ″	r	′ ″
I Microm. Eq......	41.850	4 37.58	44.870	5 34.25
II Red. to Mer......	.880	0.19	.830	0.10
VI Inclination	42.040		.960	
VII Refraction.......	.070	1 27.7	45.000	1 3.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
40 H. Virginis	14 5 0.11	11	−0.36	+8.96	305 17 49.9	29.6
κ Virginis	14 7 11.45	11	−0.36	+8.91	311 19 7.4	29.3
4 Ursae Minoris	14 9 12.77	11	−0.70	[+8.81]	39 6	....
2 Librae	14 17 40.40	11	−0.36	+8.98	309 52 8.4	28.9
Mayer 575	14 28 50.05	11	−0.36	+9.00	301 7 27.7	29.6
ε Ursae Minoris	16 56 42.70	7	−0.93	[+9.24]	43 16	....
η Ophiuchi	17 4 15.88	11	−0.36	+9.02	305 30 36.4	29.0
ξ Serpentis	17 31 29.08	11	−0.36	+8.97	305 46 23.1	29.3
Mayer 703	17 49 39.14	11	−0 36	+8.99	302 19 20.4	29.1
ν Ophiuchi	17 53 9.31	11	−0.36	+8.98	311 20 43.6	29.8

h 14.242 .... *dt* .... +8.962 s
Hourly rate .... +0.0084

Adopted Equator Point .... 321° 6′ 29.32″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 9	29.814	75.1	73.9
15 1	29.824	74.0	72.5
15 58	29.826	73.0	71.2
16 48	29.824	73.0	71.0
17 56	29.814	72.2	70.2

Notes.

5. Somewhat hazy.
37. Clouds after this.
46. Microscopes carefully read a second time.
87. Clouds after this.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0				$D=$ Z. D. N. to 1895.0				R		
			302°	303°	304°	305°	302°	303°	304°	305°	302° 30′	303° 30′	304° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
303	−0.364	14 0	+14.163	+14.100	+14.038	+13.976	+19.44	+19.13	+18.84	+18.53	86.48	83.25	80.20
304	0.363	14 30	14.214	14.141	14.066	13.995	19.04	18.76	18.49	18.21	86.62	83.39	80.33
305	−0.362	15 0	14.256	14.171	14.089	14.006	18.34	18.11	17.86	17.60	86.78	83.54	80.48
		15 30	14.286	14.195	14.104	14.014	17.32	17.11	16.89	16.68	86.90	83.66	80.59
		16 0	14.306	14.209	14.111	14.014	15.99	15.82	15.64	15.46	87.02	83.77	80.70
		16 30	14.315	14.212	14.110	14.008	14.40	14.26	14.12	13.99	87.02	83.77	80.70
		17 0	14.312	14.206	14.101	13.995	12.56	12.46	12.36	12.27	87.04	83.79	80.72
		17 30	14.298	14.191	14.084	13.979	10.48	10.43	10.37	10.32	87.10	83.85	80.78
		18 0	+14.274	+14.166	+14.060	+13.956	+ 8.23	+ 8.22	+ 8.21	+ 8.20	87.16	83.91	80.84

1895 JUNE 28. ZONE 125. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.6	7.2	9.3	11.4	13.6	15.9	c	42 11.48	305 52 10.0 11.0	III 42.880	16 42 33.12	−15 10 57.54	−15 4393
2	9.0	37.1	39.4	41.5	43.6	45.7	c	54 41.46	305 34 10.0 11.6	III B 43.790	16 55 3.13	15 31 49.40	15 4425
3	9.3	24.4	26.5	28.5	30.3	32.5	a	55 58.21	305 34 " "	I A 41.820	16 56 19.87	15 25 56.40	15 4429
4	9.3	2.8	5.0	7.0	9.3	11.5	c	56 7.12	304 48 10.0 11.8	III 44.985	16 56 28.85	16 14 14.68	16 4396
5	9.2	49.5	51.7	53.5	55.3	57.6	a	57 23.31	305 30 10.0 11.5	I 43.725	16 57 44.97	15 32 35.08	15 4437
6	9.0	1.2	3.3	5.5	7.7	9.9	c	4 5.52	305 0 10.0 11.0	III 43.920	17 4 27.22	16 2 32.13	15 4466
7	8.3	49.4	51.6	53.8	55.8	58.0	c	4 53.72	304 38 10.0 11.3	III C 45.470	17 5 15.47	16 30 29.16	16 4434
8	8.5	17.6	19.9	22.0	24.2	26.5	c	5 22.04	304 38 " "	V A 41.460	17 5 43.77	16 22 5.88	16 4436
9	8.9	46.5	48.7	50.9	53.0	55.2	c	6 50.86	304 38 " "	III 46.660	17 7 12.59	16 23 39.44	16 4443
10	9.2	47.3	49.4	51.5	53.8	55.9	c	7 51.58	305 34 10.0 12.0	III 42.880	17 8 13.23	−15 28 48.67	−15 4490
11	8.9	15.1	17.2	19.1	20.9	23.3	a	9 49.07	304 22 10.0 10.7	I 41.140	17 10 10.83	−16 41 23.79	−16 4459
12	9.0	11.9	14.0	15.9	17.7	20.0	a	10 45.82	304 36 10.0 11.2	I 44.460	17 11 7.55	16 26 19.84	16 4466
13	8.9	56.6	58.6	0.5	2.4	4.7	a	11 30.33	305 38 10.0 11.3	I 41.570	17 11 51.97	15 25 11.11	15 4507
14	9.0	32.0	34.0	35.9	37.8	40.1	a	12 5.90	304 28 10.0 12.0	I 44.420	17 12 27.65	16 34 19.10	16 4468
15	9.4	7.1	9.4	11.8	14.0	16.0	c	12 11.66	305 24 10.0 12.1	V 43.400	17 12 33.32	15 38 38.86	15 4510
16	8.0	37.4	39.5	41.6	43.4	45.4	e	12 11.75	305 24 " "	VII B 45.040	17 12 33.41	15 41 22.19	15 4511
17	8.8	49.8	51.9	54.2	56.4	58.6	c	13 54.18	304 28 10.0 12.1	V 43.270	17 14 15.92	16 34 43.36	16 4478
18	9.1	53.4	55.6	57.5	59.6	1.3	e	14 27.82	305 42 10.0 12.4	VII 41.760	17 14 49.44	15 21 9.69	15 4517
19	9.1	13.0	15.1	17.3	19.4	21.6	c	18 17.28	305 18 10.0 11.6	III 46.880	17 18 38.92	15 43 29.03	15 4539
20	9.1	49.1	51.4	53.5	55.6	57.8	c	18 53.48	305 50 10.0 11.6	III B 43.760	17 19 15.08	−15 15 40.53	−15 4544
21	8.9	31.7	33.8	35.9	38.2	40.4	c	19 36.00	305 50 " "	III A 40.500	17 19 57.59	−15 10 14.16	−15 4547
22	8.8	32.7	34.9	37.0	39.3	41.5	c	20 37.08	305 22 10.0 11.0	III (A) 44.425	17 20 58.72	15 37 0.06	15 4551
23	8.0	59.2	1.4	3.5	5.6	7.8	c	21 3.50	305 22 " "	V C 46.640	17 21 25.15	15 46 0.10	15 4554
24	9.0	3.3	5.5	7.7	9.9	12.0	c	22 7.68	305 22 " "	III A 43.240	17 22 29.32	15 37 22.25	15 4557
25	9.1	5.6	7.8	9.9	12.1	14.3	c	23 9.94	304 32 10.0 12.0	III 43.470	17 23 31.66	16 30 34.69	16 4526
26	8.8	53.4	55.6	57.7	59.9	2.1	c	23 57.74	305 28 10.0 11.8	III 45.290	17 24 19.37	15 33 56.95	15 4569
27	8.2	18.1	20.2	22.4	24.6	26.9	c	24 22.44	305 28 " "	III 46.890	17 24 44.07	15 33 26.10	15 4572
28	8.9	38.2	40.3	42.5	44.7	46.8	c	29 42.50	305 14 10.0 11.4	III A 41.410	17 30 4.13	15 45 54.79	15 4606
29	9.3	46.2	48.4	50.5	52.8	55.0	c	30 50.58	305 14 " "	III B 40.670	17 31 12.22	15 52 37.26	15 4616
30	9.2	28.1	30.2	32.2	34.5	36.7	c	31 32.34	305 14 " "	III A 41.180	17 31 53.97	−15 45 58.53	−15 4623

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
31	9.3	0.6	2.8	4.8	6.8	8.7	e	31 34.93	304 44 10.0 11.6	VII 44.060	17 31 56.62	—16 18 22.43	—16 4569
32	8.7	13.6	15.7	17.9	20.3	22.4	c	33 17.98	305 20 10.0 11.6	III 44.470	17 33 39.61	15 42 9.77	15 4635
33	8.9	49.4	51.5	53.5	55.3	57.6	a	35 23.20	305 48 10.0 11.8	I 44.090	17 35 44.78	15 14 13.41	15 4646
34	8.9	23.9	26.1	27.8	29.7	32.0	a	35 57.82	304 36 10.0 11.6	I 41.640	17 36 19.52	16 27 3.69	16 4592
35	9.4	32.4	34.8	36.7	38.5	40.6	e	36 6.89	305 28 10.0 11.1	VII C 44.740	17 36 28.52	15 40 31.75	15 4651[1]
36	9.1	2.9	5.0	7.2	9.4	11.7	c	36 7.24	305 28 " "	V C 44.680	17 36 28.87	15 40 31.92	15 4651[2]
37	8.0	59.6	1.7	3.8	5.8	7.5	e	36 33.99	305 28 " "	VII A 45.460	17 36 55.60	15 30 36.91	15 4655
38	9.3	24.6	26.8	29.0	31.1	33.2	c	40 28.94	305 4 10.0 11.1	III 45.420	17 40 50.58	15 57 49.92	15 4675
39	9.0	10.1	12.3	14.5	16.7	18.8	c	44 14.48	304 38 10.0 11.0	III B 45.740	17 44 36.17	16 26 57.01	16 4627
40	8.9	36.2	38.3	40.0	42.0	44.2	a	45 10.05	304 38 " "	III 48.525	17 45 31.73	—16 22 49.96	—16 4631
41	8.8	19.3	21.3	23.6	25.8	28.0	c	45 23.60	305 34 10.0 11.1	V 46.970	17 45 45.19	—15 27 18.36	—15 4699
42	8.8	45.8	48.0	50.1	52.4	54.7	c	45 50.20	305 34 " "	V 44.135	17 46 11.79	15 28 12.59	15 4702
43	9.0	16.0	18.2	20.3	22.5	24.8	c	47 20.36	305 24 10.0 11.7	III 44.550	17 47 41.97	15 38 2.91	15 4706
44	9.1	29.5	31.6	33.8	36.0	38.1	c	48 33.80	305 24 " "	III B 40.370	17 48 55.41	15 42 35.98	15 4713
45	9.3	58.3	0.6	2.7	4.9	7.2	c	49 2.74	305 24 " "	III B 39.820	17 49 24.35	15 42 46.38	15 4717
46	9.3	38.5	40.6	42.6	45.0	47.2	c	49 42.78	305 24 " "	III B 46.070	17 50 4.39	15 40 46.17	15 4721
47	8.3	37.3	39.5	41.5	43.8	45.9	c	50 41.60	305 24 " "	III B 47.950	17 51 3.21	15 40 9.72	15 4729
48	9.4	54.2	56.3	58.5	0.7	2.8	c	50 58.50	305 24 " "	V (B) 47.780	17 51 20.11	15 40 14.44	15 4732
49	9.5	5.2	7.4	9.5	11.7	......	c	52 9.52	304 58 10.0 12.0	VI 45.090	17 52 31.16	16 3 53.82	16 4669
50	......	16.2	18.4	20.4	22.3	24.2	e	52 50.49	304 42 10.0 12.4	VII 46.730	17 53 12.15	—16 19 23.22	—16 4673
51	9.0	39.7	41.8	44.0	46.2	48.3	c	55 44.00	305 20 10.0 10.7	V A 44.650	17 56 5.60	—15 38 44.77	—15 4778
52	8.8	45.2	47.4	49.6	51.8	54.2	c	58 49.64	305 0 10.0 11.4	III 47.790	17 59 11.26	16 0 57.89	16 4702
53	9.5	11.9	14.0	16.2	18.5	20.5	c	59 16.22	305 0 " "	V B 45.160	17 59 37.85	16 5 3.03	16 4703
54	9.3	25.8	27.6	29.5	31.5	33.8	a	0 59.44	305 26 10.0 11.6	I B 41.090	18 1 21.02	15 40 15.90	15 4819
55	9.3	5.7	8.0	10.0	12.2	14.2	c	1 10.02	305 26 " "	III (A) 40.460	18 1 31.60	15 34 0.98	15 4821
56	9.0	31.9	34.0	36.3	38.5	40.6	c	1 36.26	305 4 10.0 11.6	V B 38.420	18 1 57.87	16 3 11.25	16 4716
57	9.0	19.4	21.7	23.7	25.6	27.4	e	1 53.80	305 4 " "	VII 43.430	18 2 15.40	15 58 22.64	15 4826
58	8.2	33.3	35.5	37.5	39.7	41.8	c	3 37.56	305 46 10.0 11.6	III B 48.360	18 3 59.10	15 17 56.24	15 4840
59	......	53.0	55.4	57.4	1.6	3.3	c_3 d_2	3 53.11	305 46	....	18 4 14.64	15 16 7	15 4843
60	9.2	18.4	20.5	22.7	24.8	26.9	c	6 22.66	305 36 10.0 11.5	III A 41.030	18 6 44.20	—15 23 47.76	—15 4864
61	7.0	57.4	59.6	1.6	3.9	6.0	c	14 1.70	305 8 10.0 10.6	III 49.390	18 14 23.27	—15 52 21.74	—15 4927
62	9.0	2.3	4.5	6.5	8.8	11.0	c	15 6.62	304 40 10.0 12.0	III B 44.290	18 15 28.25	16 25 13.17	16 4829
63	9.1	37.1	39.3	41.3	43.3	45.1	e	15 11.40	304 40 " "	V (B) 44.620	18 15 33.03	16 25 8.35	16 4830
64	8.7	6.4	8.7	10.7	12.6	14.4	e	15 40.74	304 40 " "	VII 43.660	18 16 2.36	16 22 14.27	16 4836
65	8.6	55.9	58.0	0.2	2.4	4.6	c	17 0.22	304 24 10.0 11.0	III 42.520	18 17 21.87	16 38 34.45	16 4850
66	8.7	40.7	42.9	45.0	47.2	49.5	c	18 45.06	304 46 10.0 10.7	III B 42.410	18 19 6.67	16 19 48.31	16 4861
67	9.5	34.4	36.7	38.8	40 9	43.2	c	19 38.80	304 46 " "	III 46.330	18 20 0.40	16 15 19.48	16 4868
68	8.4	13.1	15.4	17.4	19.6	21.8	c	20 17.46	305 20 10.0 11.1	V 46.500	18 20 39.01	15 41 15.47	15 4970
69	9.3	31.0	33.1	34.9	36.8	39.0	a	22 4.83	304 56 10.0 11.0	I 44.950	18 22 26.41	16 5 42.91	16 4887
70	9.4	......	2.8	5.0	7.2	9.4	c	22 5.02	305 26 10.0 12.2	V 50.650	18 22 26.56	—15 33 54.36	—15 4975
71	......	......	9.8	11.7	13.7	15.5	(e)	22 41.95	305 26	....	18 23 3.49	—15 37 18	—15 4979
72	8.9	30.0	32.3	34.4	36.6	38.7	c	24 34.40	305 14 10.0 11.0	III 42.360	18 24 55.95	15 48 32.42	15 4991
73	8.2	11.8	13.8	15.6	17.4	19.8	a	25 45.43	305 46 10.0 11.5	III 46.490	18 26 6.93	15 15 10.98	15 5001
74	9.0	17.2	19.2	21.3	23.6	25.9	c	26 21.44	305 22 10.0 11.0	III A 45.070	18 26 42.98	15 36 23.99	15 5003
75	8.8	57.1	59.3	1.3	3.3	5.2	e	26 31.52	305 22 " "	V C 44.150	18 26 53.07	15 46 24.33	15 5004
76	8.2	36.2	38.4	40.5	42.8	45.0	c	30 40.58	304 58 10.0 11.0	V A 41.180	18 31 2.14	16 1 39.77	16 4952
77	9.6	30.8	33.0	35.0	37.0	38.8	e	31 5.15	304 58 " "	VII B 44.490	18 31 26.72	16 7 6.15	16 4957
78	8.7	20.0	22.3	24.4	26.7	28.7	c	35 24.42	305 2 10.0 10.6	III C 49.120	18 35 45.98	16 4 45.83	16 4984
79	8.6	5.7	7.9	10.0	12.2	14.2	c	36 10.00	305 2 " "	III A 42.850	18 36 31.55	15 57 4.30	15 5063
80	8.7	17.4	19.6	21.6	23.9	25.9	c	36 21.68	305 2 " "	V 43.690	18 36 43.23	—16 0 4.84	—16 4990
81	9.1	48.8	51.0	53.0	55.0	56.8	e	36 23.16	305 2 " "	VII B 48.800	18 36 44.71	—16 1 41.58	—16 4991
82	9.6	42.5	44.5	46.5	48.3	50.6	a	39 16.44	304 22 10.0 11.0	I C 51.445	18 39 38.06	16 44 0.28	16 5011
83	9.3	17.1	19.4	21.5	23.6	25.8	c	39 21.48	304 22 " "	III 55.220	18 39 43.09	16 36 22.98	16 5013
84	9.5	28.5	30.7	32.8	35.3	37.3	c	41 32.92	304 26 10.0 11.2	III B 43.900	18 41 54.53	16 39 12.46	16 5030
85	8.0	55.4	57.6	59.7	1.8	4.1	c	41 59.72	304 26 " "	V A 47.130	18 42 21.32	16 31 43.14	16 5034
86	9.0	46.1	48.3	50.4	52.7	54.9	c	43 50.48	305 16 10.0 11.4	III 47.840	18 44 11.99	15 44 40.19	15 5110
87	8.9	52.1	54.4	56.5	58.7	0.9	c	45 56.52	304 34 10.0 11.4	III 50.680	18 46 18.10	16 25 47.03	16 5053
88	8.0	48.6	50.7	52.9	55.0	57.2	c	46 52.88	304 34 " "	III B 47.170	18 47 14.47	16 30 7.36	16 5060
89	9.4	7.0	9.3	11.4	13.5	15.6	c	47 11.36	304 34 " "	V B 48.070	18 47 32.95	16 29 51.55	16 5064
90	9.1	3.0	5.2	7.4	9.7	11.7	c	48 7.40	304 34 " "	V C 50.120	18 48 28.99	—16 32 24.40	—16 5069
91	9.1	35.7	37.8	39.8	42.1	44.2	c	48 39.92	304 34 " "	V B 43.810	18 49 1.50	—16 31 12.78	—16 5072
92	9.4	18.3	20.4	22.6	24.8	27.0	c	49 22.62	304 34 " "	V C 46.290	18 49 44.20	16 33 37.46	16 5077
93	......	49.4	51.6	53.7	55.7	57.4	e	49 23.73	304 34 " "	VII(B) 48.000	18 49 45.30	16 29 53.46	16 5078
94	8.1	2.6	4.9	7.0	8.9	10.7	e	49 36.99	304 34 " "	VII B 52.290	18 49 58.56	16 28 31.04	16 5083
95	9.3	18.8	20.8	23.0	25.2	27.4	c	52 23.04	305 32 10.0 11.6	III A 40.180	18 52 44.51	15 27 47.98	15 5159
96	9.4	11.9	13.9	17.9	19.6	22.3	c_4 d_3	53 9.52	305 32 " "	VI B 37.650	18 53 31.00	15 35 7.20	15 5164
97	9.1	4.7	7.0	8.9	10.9	12.8	e	53 39.18	305 32 " "	V A 42.880	18 54 0.65	15 26 57.24	15 5166
98	9.3	49.4	51.5	53.6	55.9	58.0	c	54 53.68	305 32 " "	III 41.850	18 55 15.15	15 30 30.48	15 5178
99	7.8	24.9	26.9	29.0	31.1	33.4	c	55 29.06	305 40 10.0 12.1	V B 42.830	18 55 50.52	15 25 25.65	15 5185
100	9.3	51.7	53.7	55.8	58.2	0.3	c	56 55.94	305 40 " "	III A 44.240	18 57 17.39	—15 18 27.89	—15 5198
101	9.0	21.3	23.4	25.5	27.7	29.9	c	57 25.56	305 40 " "	III B 41.870	18 57 47.02	—15 25 41.88	—15 5204
102	8.9	4.0	6.0	8.2	10.4	12.6	c	0 8.24	305 44 10.0 11.1	III 44.970	19 0 29.68	15 17 28.49	15 5228
103	9.3	52.9	55.0	57.2	59.3	1.5	c	0 57.18	305 44 " "	III 49.410	19 1 18.62	—15 16 3.02	—15 5233

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
104	8.9	39.3	41.4	43.6	45.8	47.9	c	1 43.60	305 44 10.0 11.1	III 47.530	19 2 5.04	—15 16 38.82	—15 5242
105	9.4	9.7	11.9	14.0	16.3	18.6	c	3 14.10	305 18 10.0 11.9	III 47.710	19 3 35.57	15 42 35.72	15 5250
106	9.0	4.8	6.9	9.1	11.4	13.6	c	5 9.16	305 18 " "	III 47.290	19 5 30.62	15 42 43.13	15 5263
107	9.2	2.0	4.0	5.8	7.7	9.9	a	7 35.67	305 24 10.0 11.6	I 47.740	19 7 57.13	15 36 32.01	15 5278
108	......	3.6	5.6	7.7	9.7	11.6	e	7 37.92	305 24 " "	VII C 47.560	19 7 59.39	15 43 5.30	15 5279
109	......	3.9	6.1	8.0	10.1	11.9	e	8 38.30	305 24 " "	VII A 47.120	19 8 59.75	15 33 32.52	15 5284
110	8.9	1.7	4.0	6.1	8.2	10.4	c	10 6.08	305 16 10.0 11.2	VI 42.390	19 10 27.54	—15 46 17.90	—15 5293
111	9.0	9.9	12.0	14.2	16.3	18.5	c	13 14.18	305 48 10.0 11.4	III 45.870	19 13 35.60	—15 13 6.49	—15 5312
112	9.1	12.1	14.2	16.3	18.7	20.9	c	14 16.44	305 32 10.0 12.0	III B 43.750	19 14 37.89	15 33 0.58	15 5318
113	9.0	29.1	31.1	33.4	35.5	39.9	c_2 d_1	14 31.23	305 32 " "	V 45.300	19 14 52.67	15 29 18.80	15 5321
114	8.7	5.7	7.9	10.1	12.3	14.5	c	16 10.10	304 20 10.0 12.0	III C 48.570	19 16 31.65	16 46 43.96	16 5287
115	9.3	45.0	47.2	49.2	51.6	53.7	c	16 49.34	304 20 " "	III A 45.470	19 17 10.87	16 38 1.63	16 5289
116	8.9	17.8	20.0	22.2	24.4	26.6	c	17 22.20	304 20 " "	III 43.760	19 17 43.74	16 41 49.67	16 5292
117	9.3	49.0	51.0	52.9	54.6	56.9	a	18 22.83	304 20 " "	I A 39.910	19 18 44.36	16 39 46.13	16 5298
118	9.4	23.9	26.1	28.2	30.5	32.7	c	18 28.28	304 20 " "	III B 39.300	19 18 49.82	16 46 28.21	16 5300
119	9.2	36.9	39.1	41.3	43.4	45.6	c	19 41.26	304 20 " "	III B 37.775	19 20 2.80	16 46 57.11	16 5307
120	8.6	12.4	14.7	16.6	18.5	20.5	e	19 46.80	305 14 10.0 11.4	VII(B) 43.000	19 20 8.25	—15 51 17.24	—15 5346
121	9.3	47.5	49.8	52.0	56.2	57.7	c_3 d_2	20 47.60	305 14 " "	VI (A) 42.240	19 21 9.04	—15 45 2.10	—15 5352
122	8.8	55.0	57.2	59.3	1.3	3.2	e	21 29.34	304 22 10.0 11.6	V 45.870	19 21 50.87	16 39 9.30	16 5318
123	8.7	10.4	12.6	14.6	16.5	18.3	e	22 44.61	304 22 " "	VII B 43.000	19 23 6.14	16 43 18.81	16 5325
124	9.3	35.9	38.1	40.1	42.2	44.0	e	23 10.21	304 22 " "	VII A 41.500	19 23 31.73	16 37 18.69	16 5329
125	9.0	13.0	15.0	16.8	18.7	21.0	a	26 46.69	305 30 10.0 10.8	I 42.350	19 27 8.11	15 32 9.26	15 5382
126	7.5	4.3	6.2	8.2	10.0	12.4	a	34 38.15	304 28 10.0 12.3	I A 40.870	19 34 59.64	16 31 21.97	16 5399
127	9.1	35.8	38.0	40.1	42.3	44.6	c	34 40.16	304 28 " "	III A 42.760	19 35 1.65	16 30 47.39	16 5400
128	9.3	9.0	11.1	13.1	15.2	17.0	e	34 43.23	304 28 " "	V B 44.010	19 35 4.73	16 36 53.63	16 5401
129	8.6	54.3	56.3	58.1	0.0	2.3	a	40 28.12	304 34 10.0 11.5	I 45.440	19 40 49.58	16 27 8.07	16 5433
130	9.2	42.8	44.8	47.1	49.2	51.4	c	40 47.06	304 52 10.0 10.4	V 41.680	19 41 8.49	—16 10 22.66	—16 5434
131	8.6	25.8	27.9	30.0	32.3	34.5	c	42 30.10	304 36 10.0 10.6	III 46.950	19 42 51.55	—16 24 40.38	—16 5440
132	8.9	21.0	23.2	25.3	27.5	29.6	c	44 25.32	305 16 10.0 11.1	III A 49.700	19 44 46.71	15 40 29.32	15 5479
133	9.3	22.2	24.5	26.5	28.7	30.9	c	45 26.56	305 16 " "	III C 43.950	19 45 47.96	15 52 0.96	15 5483
134	9.0	21.4	23.6	25.8	28.0	30.2	c	46 25.80	305 16 " "	III A 40.070	19 46 47.19	15 43 33.54	15 5490
135	9.1	37.7	39.9	42.0	44.4	46.4	c	46 42.08	305 16 " "	VI A 50.160	19 47 3.46	15 40 21.97	15 5492
136	8.7	33.9	36.0	38.0	40.4	42.6	c	48 38.18	304 50 10.0 10.5	III 47.490	19 48 59.60	16 10 27.47	16 5454
137	8.8	50.2	52.5	54.6	56.7	58.9	c	49 54.58	305 20 10.0 11.4	III 48.450	19 50 15.96	15 40 6.69	15 5504
138	8.6	29.0	31.1	33.1	35.2	37.5	c	51 33.18	305 20 " "	III B 48.590	19 51 54.57	15 43 16.80	15 5513
139	6.0	51.0	53.2	55.3	57.4	59.4	c	51 55.26	305 20 " "	V C 52.040	19 52 16.65	15 45 24.55	15 5516
140	9.5	42.3	44.6	46.8	48.5	50.6	e	52 16.73	304 40 10.0 11.0	VII C 47.285	19 52 38.17	—16 26 58.94	—16 5470
141	9.4	57.1	59.2	1.4	3.6	5.8	c	58 1.42	304 22 10.0 12.1	VI C 49.020	19 58 22.87	—16 44 23.87	—16 5489
142	9.4	53.9	55.9	58.1	59.9	2.0	e	58 28.08	304 22 " "	VII C 45.010	19 58 49.53	16 45 41.14	16 5494
143	......	44.8	47.0	49.0	51.0	52.8	e	59 19.06	304 22 " "	VII 44.480	19 59 40.50	16 39 25.21	16 5498
144	9.4	13.2	15.4	17.5	19.6	21.9	c	5 17.52	305 20 10.0 11.0	III (C) 45.170	20 5 38.89	15 47 31.58	15 5576
145	9.4	42.6	44.6	46.8	48.9	51.0	c	6 46.78	305 20 " "	III C 50.900	20 7 8.14	15 45 41.12	15 5581
146	8.9	20.5	22.7	24.8	27.0	29.2	c	7 24.84	305 20 " "	V B 47.810	20 7 46.20	15 43 28.85	15 5584
147	8.5	12.7	14.8	16.7	18.5	20.9	a	10 46.50	305 32 10.0 11.6	I 44.250	20 11 7.83	—15 29 18.97	—15 5606

Reduction Elements. Zone 125.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 28.4....	—0.084	—0.175	—0.224	—0.166	—0.162	—0.289
28.6....	—0.247	—0.149	—0.354			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ζ Ophiuchi		24 Scorpii		20 Ophiuchi		24 Ophiuchi		63 Sagittarii		ρ Capricorni	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		′ ″	
	CIRCLE READING.	310 40 11.20		303 30 10.65		310 26 10.65		298 4 10.80		307 6 10.75		302 52 10.75	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......		5 55.06	43.440	5 8.27	44.065	5 19.85	42.260	4 46.23	45.650	5 49.83		6 7.75
II	Red. to Mer......		0.10	.510	0.17	.105	0.10	.330	0.23	.710	0.15		0.18
VI	Inclination	45.980	—1.68	.640		.240		.495			0.45	46.650	—1.68
VII	Refraction.......	46.020	1 4.3	.650	1 23.4	.245	1 4.9	.560	1 43.4	.820	1 13.4	.675	1 25.9

		Mayer 842	
		° ′ ″	
	CIRCLE READING.	310 50 10.50	
		r	′ ″
I	Microm. Eq......		4 45.44
II	Red. to Mer......		0.13
VI	Inclination		2.01
VII	Refraction	42.370	1 4.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ζ Ophiuchi	16 31 17.78	11	—0.50	+ 8.35	310 45 0.4	28.3
24 Scorpii	16 35 25.27	11	—0.52	+ 8.39	303 33 55.7	29.1
20 Ophiuchi	16 43 56.91	11	—0.50	+ 8.15	310 30 25.7	27.5
24 Ophiuchi	16 50 23.72	11	—0.54	+ 8.20	298 7 13.9	27.4
ε Ursae Minoris	16 56 43.28	8	—0.63	[+ 7.89]	43 16	....
λ Ursae Minoris	19 28 20.63	3	—2.71	[+11.07]	50 2	....
63 Sagittarii	19 56 1.24	11	—0.51	+ 8.26	307 10 47.8	26.7
ρ Capricorni	20 22 47.91	7	—0.52	+ 8.25	302 56 51.1	25.1
Mayer 842	20 26 34.49	11	—0 50	+ 8.17	310 53 49.7	27.7

h 16.670	*dt*	s +8.272
	Hourly rate	—0.0126
	Adopted Equator Point	° ′ ″ 321 6 27.40

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
16 46	29.926	74.6	73.1
17 25	29.928	73.8	72.6
18 28	29.922	73.0	71.3
19 30	29.928	71.0	70.9
20 30	29.928	72.0	70.3

Notes.

Toward the end of this zone the Z. D. Micrometer plate refused to respond promptly to the action of spring. The observer hit eye end just after observation of ε Ursae Minoris.

146. Clouds after this.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			$D =$ Z. D. N. to 1895.0			R		
			304°	305°	306°	304°	305°	306°	304°	305°	306°
°	s	h m	s	s	s	″	″	″	″	″	″
304	—0.520	16 30	+14.089	+13.988	+13.886	+14.18	+14.01	+13.84	82.17	79.16	76.31
305	0.516	17 0	14.064	13.959	13.856	12.40	12.26	12.14	82.22	79.21	76.37
306	—0.513	17 30	14.031	13.926	13.820	10.38	10.29	10.20	82.30	79.29	76.44
		18 0	13.990	13.885	13.780	8.17	8.12	8.08	82.40	79.38	76.52
		18 30	13.942	13.840	13.736	5.80	5.81	5.80	82.47	79.45	76.60
		19 0	13.889	13.790	13.692	3.31	3.36	3.40	82.53	79.51	76.65
		19 30	13.829	13.736	13.644	+ 0.75	+ 0.84	+ 0.93	82.57	79.54	76.68
		20 0	13.765	13.681	13.595	— 1.83	— 1.70	— 1.57	82.62	79.60	76.74
		20 30	+13.699	+13.623	+13.548	— 4.41	— 4.24	— 4.06	82.66	79.63	76.77

1895 JULY 10. ZONE 126. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.8	29.8	31.9	34.0	36.4	38.5	c	44 34.12	303 4 10.0 11.5	III	43.645	15 44 52.71	—17 59 11.04	—17 4437
2	9.0	9.7	12.0	14.1	16.4	18.6	c	1 14.16	303 26 10.0 12.4	III	45.965	16 1 32.70	17 36 19.58	17 4492
3	8.9	36.8	39.0	41.0	43.3	45.6	c	32 41.14	303 20 10.0 11.2	III	46.950	16 32 59.64	17 41 50.95	17 4608
4	8.9	34.4	36.5	38.7	41.0	43.0	c	34 38.72	303 56 10.0 12.0	III	43.010	16 34 57.16	17 7 3.73	17 4613
5	8.7	23.6	25.8	28.0	30.0	32.2	c	50 27.92	303 6 10.0 11.7	III B	48.700	16 50 46.42	17 58 24.92	17 4663
6	9.0	28.0	30.2	32.4	34.4	36.8	c	51 32.36	303 6 " "	III C	48.870	16 51 50.86	18 1 34.17	17 4670
7	9.0	27.0	29.3	31.5	33.7	35.9	c	52 31.48	303 6 " "	III A	42.870	16 52 49.97	17 53 47.40	17 4673
8	8.5	9.5	11.8	13.9	16.1	18.2	c	53 13.90	304 18 10.0 12.9	III	42.770	16 53 32.28	16 45 0.32	16 4386
9	8.8	35.5	37.4	39.4	41.2	43.5	a	58 9.43	303 54 10.0 11.0	I	43.540	16 58 27.84	17 8 44.37	17 4697
10	8.3	14.6	16.9	19.0	21.3	23.5	c	58 19.06	303 2 10.0 12.0	III	46.285	16 58 37.55	—17 59 55.27	—17 4698
11	8.6	35.9	38.2	40.3	42.5	44.7	c	59 40.32	303 2 " "	III	49.940	16 59 58.80	—17 58 44.61	—17 4705
12	9.3	24.9	27.1	29.2	31.4	33.7	c	1 29.26	303 48 10.0 12.2	III B	47.120	17 1 47.67	17 16 49.01	17 4713
13	8.8	42.6	44.8	47.1	49.3	51.5	c	1 47.06	303 48 " "	V	44.940	17 2 5.46	17 14 18.80	17 4714
14	8.8	48.4	50.6	52.7	55.0	57.0	c	3 52.74	303 6 10.0 12.0	III A	44.370	17 4 11.20	17 53 14.45	17 4731
15	9.1	23.6	25.8	27.5	29.3	31.9	a	4 57.80	303 6 " "	I C	47.160	17 5 16.27	18 2 0.76	17 4737
16	8.9	58.9	1.1	3.2	5.4	7.6	c	5 3.24	303 32 10.0 12.5	V B	40.180	17 5 21.66	17 35 3.11	17 4738
17	8.7	17.0	19.3	21.3	23.6	25.8	c	6 21.40	303 32 " "	III A	39.060	17 6 39.81	17 28 53.93	17 4744
18	8.9	30.0	32.3	34.6	36.7	38.8	c	6 34.48	303 32 " "	V (A)	41.160	17 6 52.89	17 28 15.10	17 4746
19	8.7	41.6	44.0	46.0	48.3	50.6	c	7 46.10	302 56 10.0 11.2	III	45.870	17 8 4.57	18 6 0.60	18 4459
20	8.6	10.6	12.8	14.9	17.2	19.2	c	8 14.94	303 42 10.0 11.0	V	42.990	17 8 33.33	—17 20 54.81	—17 4753
21	8.9	30.0	32.4	34.4	36.7	38.9	c	9 34.48	303 0 10.0 10.8	III B	49.660	17 9 52.94	—18 4 0.48	—18 4472
22	8.9	29.8	32.0	34.3	36.6	38.7	c	10 34.28	303 0 " "	III	47.360	17 10 52.74	18 1 30.99	17 4758
23	8.8	50.2	52.5	54.6	56.8	58.9	c	10 54.60	303 30 10.0 11.5	V	43.410	17 11 13.01	17 32 46.16	17 4761
24	8.6	22.0	24.3	26.4	28.6	30.8	c	13 26.42	303 2 10.0 10.6	III	45.475	17 13 44.87	18 0 6.13	17 4771
25	9.0	23.9	26.2	28.3	30.7	32.8	c	14 28.38	304 12 10.0 11.3	III	50.270	17 14 46.71	16 48 29.91	16 4480
26	9.4	17.0	19.0	21.3	23.6	25.6	c	15 21.30	304 12 " "	III B	42.530	17 15 39.64	16 54 11.42	16 4483
27	8.9	46.3	48.5	50.8	53.0	57.2	c_2 d_1	15 48.56	303 26 10.0 10.6	V B	41.750	17 16 6.97	17 40 30.38	17 4787
28	8.2	23.4	25.6	27.7	30.0	32.1	c	16 27.76	303 26 " "	V	44.620	17 16 46.16	17 36 21.57	17 4791
29	8.6	12.6	14.7	16.9	19.2	21.4	c	17 16.96	303 10 10.0 11.6	III	44.050	17 17 35.39	17 52 31.22	17 4793
30	8.8	21.8	24.0	26.2	28.4	30.5	c	20 26.18	303 46 10.0 11.4	III	41.950	17 20 44.54	—17 17 8.67	—17 4807
31	9.1	58.5	0.7	2.7	4.5	6.9	a	23 32.79	303 18 10.0 11.5	I	46.380	17 23 51.19	—17 43 42.34	—17 4821^1
32	9.0	28.7	30.9	33.0	35.3	37.5	c	23 33.08	303 18 " "	III	46.930	17 23 51.48	17 43 33.35	17 4821^2
33	8.6	50.2	52.5	54.6	59.0	0.6	c_3 d_2	23 50.29	303 18 " "	V	45.780	17 24 8.69	17 43 56.64	17 4825
34	9.2	32.0	34.4	36.5	40.8	42.5	c_3 d_3	24 32.15	303 18 " "	V B	42.870	17 24 50.55	—17 48 5.75	—17 4829

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	
35	8.8	32.2	34.4	36.4	38.4	40.2	e	25 6.40	303 58 10.0 11.5	VII 45.760	17 25 24.72	−17 3 55.73	−17 4834
36	9.3	6.1	8.4	10.5	12.6	14.9	c	27 10.50	303 4 10.0 10.6	V 44.760	17 27 28.91	17 58 16.20	17 4843
37	8.5	19.7	21.7	24.1	26.4	28.5	c	28 24.08	302 54 10.0 11.6	III 41.990	17 28 42.51	18 9 7.63	18 4570
38	9.3	41.5	43.4	45.6	47.9	50.0	c	28 45.64	302 54 “ “	V (B) 45.990	17 29 4.07	18 11 5.53	18 4572
39	9.2	36.4	38.8	40.8	42.8	44.6	e	29 10.57	302 54 “ “	V B 47.230	17 29 29.00	18 10 41.61	18 4578
40	8.2	5.1	7.2	9.4	13.6	15.3	c_3 d_2	30 5.03	303 14 10.0 11.6	V 46.170	17 30 23.42	−17 47 47.08	−17 4857
41	9.2	39.6	41.7	43.9	46.2	48.3	c	30 43.94	303 14 “ “	V C 48.680	17 31 2.34	−17 53 24.71	−17 4861
42	9.0	26.4	28.5	30.5	32.9	35.0	c	31 30.66	303 14 “ “	V A 41.690	17 31 49.04	17 45 57.33	17 4864
43	9.0	23.5	25.7	27.9	30.0	32.2	c	34 27.86	303 50 10.0 11.9	III (42).890	17 34 46.18	17 12 45.15	17 4883
44	9.0	8.0	10.2	12.4	14.6	16.8	c	35 12.40	303 50 “ “	III 45.665	17 35 30.72	17 11 51.67	17 4887
45	8.9	25.6	27.9	30.0	34.4	35.9	c_3 d_2	35 25.68	303 30 10.0 11.2	V 44.010	17 35 44.03	17 32 26.05	17 4888
46	9.1	8.9	11.1	13.0	15.0	17.0	e	35 42.99	303 30 “ “	V B 41.500	17 36 1.35	17 36 27.59	17 4891
47	8.9	22.2	24.4	26.5	28.8	30.9	c	37 26.56	304 18 10.0 12.5	III 38.670	17 37 44.83	16 46 3.43	16 4599
48	8.2	9.2	11.6	13.6	15.9	18.0	c	38 13.66	304 18 “ “	III B 39.160	17 38 31.94	16 49 7.02	16 4603
49	9.0	28.2	30.4	32.5	35.0	36.9	c	38 32.60	304 18 “ “	V 45.470	17 38 50.87	16 43 53.88	16 4607
50	8.6	49.1	51.2	53.4	55.7	57.8	c	38 53.44	304 18 “ “	V 47.720	17 39 11.70	−16 43 10.58	−16 4610
51	8.9	32.9	35.0	37.1	39.4	41.5	c	40 37.18	303 12 10.0 12.0	III 42.090	17 40 55.55	−17 51 0.20	−17 4918
52	8.3	13.3	15.5	17.7	19.9	22.2	c	41 17.72	302 58 10.0 11.4	III 44.700	17 41 36.11	18 4 10.91	18 4645
53	8.8	15.3	17.4	19.6	21.8	24.0	c	42 19.62	304 14 10.0 11.8	III 46.590	17 42 37.88	16 47 30.26	16 4620
54	8.4	9.8	11.9	14.0	16.5	18.5	c	46 14.14	302 58 10.0 11.0	III 45.520	17 46 32.52	18 3 53.64	18 4666
55	9.3	32.3	34.5	36.6	38.8	41.2	c	47 36.68	303 46 10.0 11.1	III 45.870	17 47 54.97	17 15 43.94	17 4945
56	9.0	12.2	14.3	16.0	17.9	20.1	a	49 46.06	304 18 10.0 12.0	I 45.650	17 50 4.30	16 43 43.82	16 4656
57	9.1	57.4	59.5	1.7	3.8	6.0	c	50 1.68	303 42 10.0 11.5	III C 48.920	17 50 19.98	17 25 10.74	17 4958
58	9.0	53.6	55.8	57.9	0.1	2.3	c	50 57.94	303 42 “ “	III A 48.080	17 51 16.22	17 15 44.94	17 4966
59	9.0	39.7	41.8	43.9	46.2	48.3	c	51 43.98	304 14 10.0 11.4	III 48.130	17 52 2.22	16 46 57.57	16 4667
60	8.2	31.6	33.7	35.9	38.1	40.3	c	52 35.92	304 14 “ “	III B 46.140	17 52 54.16	−16 50 48.73	−16 4671
61	8.6	49.4	51.6	53.8	56.1	58.0	c	54 53.78	302 58 10.0 11.6	III 44.600	17 55 12.14	−18 4 7.94	−18 4757
62	9.0	36.8	38.9	40.8	42.8	45.1	a	56 11.02	303 12 10.0 11.6	I 43.470	17 56 29.35	17 50 26.80	17 4995
63	8.6	30.0	32.0	34.2	36.4	38.6	c	56 34.24	303 36 10.0 11.1	III C 48.365	17 56 52.53	17 31 19.58	17 4997
64	8.2	53.9	56.2	58.4	0.6	2.7	c	56 58.36	303 36 “ “	V 48.530	17 57 16.64	17 24 51.40	17 4999
65	8.5	9.3	11.7	13.9	16.0	18.2	c	58 13.82	303 46 10.0 11.5	III C 48.010	17 58 32.09	17 21 25.11	17 5005
66	9.2	13.8	15.8	18.0	20.4	22.5	c	59 18.10	303 46 “ “	III B 49.190	17 59 36.36	17 17 49.18	17 5011
67	9.3	22.1	24.3	26.4	28.7	31.0	c	0 26.50	303 46 “ “	III A 45.410	18 0 44.75	17 12 32.61	17 5020
68	8.0	37.7	40.0	42.2	44.4	46.5	c	1 42.16	303 52 10.0 10.6	III 44.500	18 2 0.40	17 10 5.18	17 5028
69	9.3	39.4	41.6	43.7	45.9	48.1	c	2 43.74	303 30 10.0 11.0	III 46.875	18 3 2.02	17 31 20.14	17 5035
70	9.5	27.8	30.0	32.3	34.4	36.6	c	3 32.22	303 30 “ “	V 41.900	18 3 50.50	−17 32 56.69	−17 5040
71	8.2	28.8	30.8	32.8	35.2	37.4	c	4 33.00	303 6 10.0 11.2	III 44.210	18 4 51.32	−17 56 11.82	−17 5050
72	9.2	22.3	24.6	26.5	28.4	30.4	e	4 56.45	303 36 10.0 11.0	V B 41.190	18 5 14.72	17 30 23.01	17 5054
73	9.0	2.2	4.3	6.5	8.8	10.9	c	6 6.54	303 36 “ “	III A 40.980	18 6 24.80	17 23 56.42	17 5064
74	8.5	32.4	34.6	36.9	39.0	41.0	c	6 36.78	303 36 “ “	III 43.740	18 6 55.04	17 26 18.67	17 5066
75	9.0	26.2	28.5	30.5	32.7	34.9	c	8 30.56	303 36 “ “	III A 42.360	18 8 48.81	17 23 29.10	17 5080
76	8.9	40.0	42.3	44.3	46.7	48.8	c	10 44.42	303 8 10.0 10.6	III B 40.390	18 11 2.73	17 58 36.46	17 5107
77	9.0	41.5	43.6	45.6	47.9	50.1	c	11 45.74	303 8 “ “	III A 40.950	18 12 4.03	17 51 56.65	17 5117
78	9.3	41.3	42.8	47.0	49.0	51.3	b_2 c_3	12 51.33	304 20 10.0 11.4	III 44.400	18 13 9.51	16 42 1.38	16 4804
79	8.7	58.0	0.3	2.4	6.7	8.2	c_3 d_2	12 58.06	304 20 “ “	V 45.240	18 13 16.24	16 41 46.57	16 4805
80	8.6	57.4	59.3	1.7	3.8	6.0	c	15 1.64	303 36 10.0 11.1	III 45.940	18 15 19.88	−17 25 33.44	−17 5151
81	9.3	27.4	29.7	31.4	33.2	35.6	a	16 1.55	303 36 “ “	I B 46.870	18 16 19.79	−17 28 26.79	−17 5159
82	9.4	58.2	0.4	2.3	4.0	6.5	a	16 32.36	303 36 “ “	II (B) 49.885	18 16 50.59	17 27 29.66	17 5164
83	9.0	38.1	40.4	42.6	44.8	47.1	c	16 42.60	303 36 “ “	III C 53.080	18 17 0.84	17 29 42.02	17 5167
84	9.0	8.0	10.3	12.4	14.7	16.8	c	17 12.44	(304 16) 10.0 11.5	V 45.100	18 17 30.61	16 45 47.91	16 4852
85	9.1	34.4	36.5	38.7	40.9	43.0	c	18 38.70	(304 16) “ “	III C 48.790	18 18 56.88	16 51 1.45	16 4859
86	9.0	52.0	54.4	56.5	58.8	1.0	c	18 56.54	(304 16) “ “	V B 45.090	18 19 14.71	16 49 0.98	16 4863
87	8.6	24.4	26.4	28.4	30.2	32.6	a	20 58.47	303 42 10.0 10.8	I B 45.100	18 21 16.68	17 22 58.87	17 5197
88	8.6	59.6	1.9	4.0	6.3	8.5	c	21 4.06	303 42 “ “	V 43.610	18 21 22.27	17 20 17.24	17 5198
89	9.2	20.0	22.2	24.3	26.4	28.8	c	23 24.34	303 42 “ “	III C 48.750	18 23 42.55	17 25 2.64	17 5213
90	8.8	40.6	42.8	45.0	47.2	49.4	c	24 45.00	303 42 “ “	III 45.540	18 25 3.20	−17 19 37.59	−17 5220
91	9.4	34.1	36.5	38.5	40.5	42.9	c	25 38.50	304 4 10.0 11.0	III B 42.710	18 25 56.68	−17 1 43.66	−17 5225
92	8.9	31.5	33.6	35.4	37.3	39.5	a	27 5.45	304 4 “ “	I A 42.845	18 27 23.61	16 55 10.17	16 4925
93	8.5	46.8	48.9	50.9	52.7	55.0	a	27 20.85	304 4 “ “	I 48.180	18 27 39.01	16 56 43.25	16 4930
94	9.3	26.0	28.0	30.2	32.6	34.7	c	27 30.30	304 4 “ “	III A 48.060	18 27 48.46	16 53 31.65	16 4931
95	9.0	54.7	56.8	59.0	1.3	3.4	c	27 59.04	304 4 “ “	III B 49.550	18 28 17.20	16 59 31.59	17 5237
96	9.0	13.1	15.4	17.6	19.7	21.9	c	28 17.54	304 4 “ “	V B 45.215	18 28 35.70	17 0 56.20	17 5240
97	8.2	51.5	53.0	57.3	59.6	1.6	b_2 c_3	29 1.66	304 4 “ “	III (C) 46.180	18 29 19.82	17 3 48.82	17 5245
98	9.4	39.6	41.7	43.9	45.8	47.6	e	29 13.82	304 4 “ “	V A 46.700	18 29 31.97	16 53 58.66	16 4938
99	9.1	47.7	49.9	52.2	54.2	56.4	c	31 52.08	304 4 “ “	III C 50.040	18 32 10.24	17 2 33.74	17 5273
100	9.0	51.0	53.3	55.6	57.7	59.8	c	33 55.48	304 12 10.0 11.2	III 45.040	18 34 13.61	−16 49 42.30	−16 4971
101	9.1	43.5	45.7	47.8	50.0	52.0	c	35 47.80	304 12 “ “	III B 41.410	18 36 5.93	−16 54 4.61	−16 4985
102	8.8	16.7	18.9	21.1	23.3	25.5	c	37 21.10	304 12 “ “	III B 44.770	18 37 39.23	16 52 59.60	16 4998
103	9.3	33.3	35.4	37.5	39.9	42.0	c	38 37.62	304 12 “ “	III B 41.960	18 38 55.75	16 53 53.10	16 5006
104	9.4	7.6	9.7	11.8	14.0	16.2	c	39 11.86	304 12 “ “	III B 44.990	18 39 29.98	16 52 54.76	16 5010
105	9.3	5.8	8.2	10.2	12.6	14.8	c	40 10.32	304 12 “ “	III 41.525	18 40 28.44	16 50 47.61	16 5019
106	9.1	35.5	37.8	39.9	42.2	44.4	c	40 39.96	304 12 “ “	III B 38.260	18 40 58.08	16 55 3.41	16 5022
107	9.1	1.0	3.2	5.3	7.4	9.7	c	41 5.32	304 12 “ “	III A 38.780	18 41 23.43	16 48 24.61	16 5026
108	7.8	49.5	51.8	54.0	56.2	58.4	c	41 53.98	304 12 “ “	III B 44.360	18 42 12.10	16 53 5.92	16 5033
109	8.7	45.9	48.1	50.1	52.4	54.7	c	48 50.24	304 22 10.0 11.6	III 46.870	18 49 8.31	16 39 1.40	16 5074
110	9.2	25.8	27.9	29.7	31.7	33.9	a	49 59.76	304 22 “ “	I B 47.600	18 50 17.83	−16 41 58.58	−16 5084

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
111	9.3	16.8	19.0	21.2	23.4	25.5	c	57 21.18	303 34 10.0 10.6	III	45.950	18 57 39.30	−17 27 19.22	−17 5440
112	9.0	7.0	8.9	10.8	12.7	15.1	a	58 40.99	303 34 " "	I	41.100	18 58 59.10	17 28 50.32	17 5453
113	9.4	22.0	24.2	26.6	28.8	30.9	c	59 26.50	303 44 10.0 10.7	III B	50.095	18 59 44.60	17 19 11.70	17 5460
114	9.1	33.0	35.1	37.4	39.7	41.8	c	0 37.40	303 44 " "	III A	41.590	19 0 55.49	17 15 25.84	17 5470
115	9.1	4.4	6.5	8.3	10.3	12.5	a	0 38.47	303 44 " "	I C	45.310	19 0 56.57	17 23 54.68	17 5469
116	8.4	8.6	10.8	13.0	15.2	17.4	c	1 13.00	303 44 " "	III C	45.825	19 1 31.10	17 23 46.01	17 5478
117	9.4	39.9	42.2	44.2	46.2	48.0	e	1 14.13	303 44 " "	VII	43.720	19 1 32.22	17 18 2.65	17 5479
118	9.3	31.7	33.9	35.8	37.8	39.8	e	2 5.82	303 44 " "	V C	48.420	19 2 23.91	17 22 57.06	17 5488
119	9.4	45.3	47.6	49.9	52.0	54.0	c	3 49.76	304 18 10.0 11.1	III C	50.550	19 4 7.80	16 48 12.50	16 5178
120	9.3	8.1	10.3	12.5	16.7	18.5	c_3 d_2	4 8.15	304 18 " "	V B	50.730	19 4 26.18	−16 44 57.56	−16 5179
121	9.1	......	50.6	54.8	56.5	59.3	c_5 d_3	4 46.30	304 18 " "	VI A	45.900	19 5 4.32	−16 40 2.03	−16 5186
122	9.1	10.1	12.2	14.1	15.8	18.3	a	7 44.10	304 8 10.0 11.0	I C	44.150	19 8 2.14	17 0 13.24	17 5527
123	8.9	51.0	53.3	55.2	57.7	59.7	c	7 55.38	304 8 " "	III (A)	42.630	19 8 13.41	16 51 2.11	16 5209
124	9.0	24.9	27.0	29.2	31.4	33.7	c	9 29.24	304 0 10.0 10.4	III	43.700	19 9 47.28	17 1 57.17	17 5540
125	9.1	0.6	2.6	4.4	6.5	8.8	a	10 34.72	303 12 10.0 10.5	I	43.760	19 10 52.82	17 49 56.62	17 5552
126	.....	30.0	32.2	34.4	36.6	38.7	c	15 34.38	303 0 10.0 10.0	I	43.120	19 15 52.48	18 2 8.21	18 5322
127	8.6	41.9	43.8	45.7	47.7	49.9	a	19 15.81	304 4 10.0 10.8	I B	41.240	19 19 33.82	17 1 52.44	17 5621
128	9.0	13.6	15.6	17.7	20.1	22.1	c	19 17.82	304 4 " "	III A	39.110	19 19 35.82	16 56 6.34	17 5622
129	8.9	38.7	40.7	42.9	45.1	47.4	c	20 42.96	304 4 " "	III	40.370	19 21 0.96	16 58 57.12	17 5633
130	9.3	47.8	50.1	51.9	53.7	56.2	a	22 22.10	303 4 10.0 10.0	I A	40.655	19 22 40.17	−17 55 37.59	−18 5378
131	9.1	24.0	26.4	28.5	30.9	33.0	c	22 28.56	303 4 " "	III B	40.070	19 22 46.64	−18 2 19.21	−18 5380
132	8.9	46.5	48.8	50.9	53.1	55.3	c	24 50.92	304 4 10.0 10.5	III	44.190	19 25 8.90	16 57 42.66	17 5650
133	8.8	51.7	53.9	56.0	58.3	0.5	c	25 56.08	304 4 " "	III B	42.750	19 26 14.06	17 1 23.27	17 5659
134	9.1	27.2	29.3	31.3	33.6	35.9	c	27 31.46	304 4 " "	III B	40.380	19 27 49.44	17 2 8.25	17 5666
135	8.9	0.6	2.9	5.0	7.3	9.6	c	28 5.08	303 30 10.0 10.7	V	43.300	19 28 23.10	−17 32 1.76	−17 5672

Reduction Elements. Zone 126.

1895.	OBSERVED.			ADOPTED.		
	c	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 10.3....	−0.279	−0.246	−0.465	−0.232	−0.199	−0.422
10.5....	−0.185	−0.152	−0.378			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		η Librae		δ Scorpii		β Scorpii pr.		20 Ophiuchi		30 Sagittarii		Piazzi XVIII. 260	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	305 42 11.20		298 44 10.80		301 32 10.95		310 26 11.20		298 46 10.90		305 36 10.50	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.....	43.045	5 0.48	40.870	4 19.08	41.235	4 25.96	44.060	5 20.25	43.000	5 0.36	45.290	5 43.35
II	Red. to Mer......	.075	0.15	.900	0.22	.280	0.19	.140	0.10	.080	0.22	.360	0.15
VI	Inclination	.220		41.075		.440		.285		.280		.450	
VII	Refraction	.275	1 17.8	.135	1 41.8	.460	1 31.1	.255	1 5.8	.230	1 42.4	.455	1 18.8

		d Sagittarii		*h* Sagittarii	
		° ′ ″		° ′ ″	
	CIRCLE READING.	301 54 10.20		295 56 9.90	
		r	′ ″	r	′ ″
I	Microm. Eq.....	44.240	5 23.64	43.920	5 18.50
II	Red. to Mer......	.275	0.19	44.020	0.25
VI	Inclination	.430		.225	
VII	Refraction	.500	1 30.6	.210	1 55.9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
η Libræ............	15 38 8.35	11	−0.72	+5.15	305 45 54.0	26.9
δ Scorpii	15 54 6.09	11	−0.75	+5.11	298 46 48.3	27.2
β Scorpii pr..........	15 59 18.52	11	−0.74	+5.08	301 35 6.0	26.5
Grombridge 750 S. P.............	16 3 30.57	8	−0.06	[+4.69]	55 46	....
20 Ophiuchi	16 44 0.25	11	−0.69	+5.02	310 30 25.8	27.0
30 Sagittarii	18 44 31.13	11	−0.75	+5.14	298 49 29.1	28.4
51 H. Cephei S. P.....	18 51 3.70	5	+0.18	[+5.75]	53 50	....
Piazzi XVIII. 260..	18 55 32.70	11	−0.72	+5.09	305 40 35.2	27.8
d Sagittarii	19 11 28.88	11	−0.74	+5.03	301 58 3.4	27.3
h Sagittarii	19 30 18.64	11	−0.77	+5.04	295 59 32.7	26.8

h		s
16.065............	*dt*	+5.090
	Hourly rate	−0.0050

Adopted Equator Point .... 321° 6′ 27″.24

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
15 45	29.960	70.2	68.1
16 35	29.970	69.2	67.2
17 33	29.974	68.0	66.2
18 30	29.968	66.5	64.4
19 32	29.960	63.8	62.1

Notes.

30. Images very good.
35. Thin clouds.
126. Images somewhat unsteady; seeing not as good as earlier in the zone.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1895.0				*R*		
			302°	303°	304°	305°	302°	303°	304°	305°	302° 30′	303° 30′	304° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
303	—0.730	15 30	......	+14.249	+14.158	......	.....	+17.02	+16.74	.....	87.92	84.64	81.55
304	0.725	16 0	......	14.223	14.126	......	.....	15.77	15.51	.....	88.00	84.72	81.62
305	—0.721	16 30	......	14.185	14.084	+13.981	.....	14.18	13.96	+13.73	88.10	84.82	81.71
		17 0	+14.239	14.133	14.029	13.924	+12.52	12.33	12.13	11.94	88.21	84.92	81.81
		17 30	+14.176	14.069	13.963	13.858	+10.37	10.22	10.05	9.90	88.29	85.00	81.88
		18 0	......	13.995	13.890	13.786	.....	7.88	7.77	7.66	88.45	85.15	82.04
		18 30	......	13.910	13.808	13.707	.....	5.38	5.31	5.24	88.61	85.31	82.19
		19 0	......	13.818	13.721	13.624	.....	+2.73	2.71	2.68	88.80	85.49	82.36
		19 30	......	+13.720	+13.628	+13.538	.....	0.00	+0.01	+0.04	88.98	85.66	82.53

1895 JULY 16. ZONE 127. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	9.0	39.8	41.9	44.0	45.9	47.8	e	57 14.06	304	38	10.0	10.5	V	43.710	16 57 30.03	—16 24 40.76	—16 4398
2	9.2	26.1	28.3	30.4	32.7	34.9	c	58 30.48	304	38	"	"	III	45.550	16 58 46.45	16 24 3.58	16 4411
3	8.6	45.0	47.1	49.3	51.4	53.6	c	3 49.28	304	52	10.0	10.7	III	42.180	17 4 5.21	16 11 5.61	16 4426
4	9.1	39.9	42.1	44.1	46.4	48.6	c	4 44.22	304	52	"	"	III B	43.860	17 5 0.15	16 13 46.33	16 4431
5	9.0	14.2	16.4	18.4	20.4	22.3	e	4 48.69	305	44	10.0	11.0	VII	47.370	17 5 4.52	15 17 25.69	15 4469
6	9.0	31.9	34.2	36.2	38.2	40.0	e	6 6.39	305	20	10.0	11.2	VII	47.670	17 6 22.26	15 41 20.41	15 4480
7	9.2	32.7	35.6	37.0	......	43.5	b_1 c_2	7 45.64	304	54	10.0	11.1	II	49.260	17 8 1.54	16 6 47.26	16 4449
8	......	0.7	2.6	4.5	6.8	24.0	a_2 b_3	8 32.51	305	12	10.0	11.3	III	44.350	17 8 48.38	15 50 21.06	15 4492
9	8.8	44.2	46.3	50.7	52.2	55.0	c_4 d_3	8 42.07	305	12	"	"	VI A	42.040	17 8 57.94	15 47 52.13	15 4493
10	8.6	54.5	56.7	58.7	1.0	3.2	c	9 58.82	304	56	11.3	12.0	V A	38.720	17 10 14.71	—16 4 54.40	—16 4460
11	9.2	36.2	38.4	40.5	42.6	44.3	e	10 10.62	304	56	"	"	VII	37.180	17 10 26.52	—16 8 40.26	—16 4461
12	9.0	10.7	13.0	15.0	17.0	18.8	[illegible]	10 45.13	304	56	"	"	VII	44.410	17 11 1.02	16 6 21.30	16 4464
13	7.8	7.6	9.2	13.4	15.5	17.8	b_2 c_3	12 17.74	304	56	"	"	III C	45.870	17 12 33.64	16 12 16.43	16 4470
14	9.1	25.2	27.5	29.7	33.9	35.6	c_3 d_2	12 25.33	304	56	"	"	V	46.110	17 12 41.22	16 5 46.95	16 4471
15	9.0	17.9	19.9	21.7	23.7	26.0	a	13 51.72	304	56	"	"	I B	44.760	17 14 7.61	16 9 22.49	16 4477
16	9.0	38.7	40.8	43.0	45.2	47.3	c	18 43.00	304	32	10.0	10.5	III A	42.450	17 18 58.91	16 27 40.70	16 4502
17	9.0	22.9	25.1	27.3	29.5	31.6	c	19 27.28	304	32	"	"	III B	41.750	17 19 43.20	16 34 22.52	16 4506
18	9.0	59.0	1.2	3.3	5.2	7.1	e	19 33.35	304	40	10.0	10.6	VII	47.400	17 19 49.25	16 21 22.85	16 4508
19	8.0	24.2	26.3	28.4	30.6	32.8	c	23 28.46	305	6	10.0	10.4	III	41.330	17 23 44.30	15 57 14.37	15 4565
20	9.2	25.4	27.6	29.7	31.9	33.9	c	24 29.70	305	40	10.0	11.3	V	47.620	17 24 45.48	—15 21 12.65	—15 4574
21	8.8	13.6	15.6	17.4	19.2	21.6	a	24 47.24	305	40	"	"	I	45.895	17 25 3.02	—15 21 42.77	—15 4576
22	9.2	21.5	23.8	25.8	27.9	29.8	e	24 55.99	305	2	10.0	10.6	VII C	48.940	17 25 11.84	16 5 16.16	16 4537
23	8.9	45.0	47.2	49.2	51.1	52.9	e	26 19.32	305	2	"	"	VII	41.515	17 26 35.16	16 1 12.34	15 4585
24	9.0	8.9	11.0	13.2	15.4	17.7	c	27 13.24	305	2	"	"	V B	40.510	17 27 29.09	16 4 43.63	16 4550
25	9.2	0.2	2.3	4.4	6.7	8.9	c	29 4.50	304	54	10.0	10.9	III	45.220	17 29 20.35	16 7 57.98	16 4557
26	8.9	23.1	25.2	27.4	29.5	31.7	c	30 27.38	304	54	"	"	III	46.020	17 30 43.22	16 7 42.12	16 4563
27	9.3	21.8	24.0	26.0	28.1	30.2	c	31 26.02	305	30	10.0	10.5	III C	49.710	17 31 41.81	15 36 55.68	15 4619
28	7.	31.8	34.0	36.0	38.2	40.4	c	31 36.08	305	30	"	"	V	49.455	17 31 51.85	15 30 35.70	15 4622
29	9.4	0.5	2.6	4.7	7.1	9.0	c	42 4.78	305	4	10.0	11.0	III	44.310	17 42 20.56	15 58 10.23	15 4683
30	8.8	18.3	20.4	22.5	24.8	26.9	c	44 22.58	305	4	"	"	III	49.720	17 44 38.35	—15 56 25.56	—15 4693
31	9.1	52.3	54.5	56.6	58.8	0.9	c	44 56.62	304	22	10.0	11.3	III B	46.520	17 45 12.47	—16 42 41.85	-16 4630
32	9.0	58.1	0.3	2.4	4.7	6.7	c	46 2.44	304	22	"	"	III C	47.890	17 46 18.29	16 45 28.05	16 4637
33	8.9	14.0	16.2	18.3	20.6	22.7	c	46 18.36	304	22	"	"	V A	42.320	17 46 34.20	16 37 34.80	16 4640
34	9.6	59.1	1.3	3.4	5.6	7.9	c	49 3.46	304	44	10.0	11.5	III	41.890	17 49 19.26	16 18 54.82	16 4653
35	8.9	18.5	20.7	22.9	25.1	27.1	c	50 22.86	305	42	10.0	12.1	III	49.320	17 50 38.55	15 18 28.81	15 4726
36	9.3	53.6	55.7	58.0	0.1	2.3	c	50 57.94	305	42	"	"	III C	50.350	17 51 13.64	15 24 35.00	15 4731
37	9.0	42.2	44.5	46.3	48.2	50.1	e	51 16.56	305	30	10.0	11.5	VII	43.945	17 51 32.27	15 32 14.96	15 4736
38	9.0	14.1	16.3	18.4	20.1	22.0	e	51 48.49	305	30	"	"	VII A	41.095	17 52 4.20	15 29 54.43	15 4741
39	8.9	36.8	39.0	41.2	45.2	46.8	c_3 d_2	52 36.77	305	30	"	"	V B	43.170	17 52 52.48	15 35 41.67	15 4747
40	9.3	55.0	57.0	58.9	0.8	3.0	a	54 28.74	305	20	10.0	12.0	I A	40.940	17 54 44.45	[—15 39 52.12]	—15 4764
41	9.0	33.4	35.5	37.7	39.9	42.0	c	54 37.70	305	20	"	"	III C	46.510	17 54 53.43	—15 47 48.60	—15 4767
42	9.4	19.0	21.4	23.5	25.8	28.0	c	55 23.54	305	20	"	"	III	46.970	17 55 39.25	15 41 13.14	15 4777
43	8.8	38.7	40.9	43.1	45.3	47.5	c	58 43.10	305	44	10.0	12.1	III B	41.950	17 58 58.77	15 22 0.42	15 4803
44	8.6	......	......	......	......	......	......	....	305	44	"	"	V	45.860	17 59 13	15 17 33.38	15 4808
45	9.4	10.2	12.5	14.6	17.0	19.0	c	0 14.66	304	24	10.0	12.4	III B	42.920	18 0 30.46	16 41 44.80	16 4706
46	9.0	5.3	7.6	9.6	11.8	14.0	c	1 9.66	304	24	"	"	III B	48.290	18 1 25.45	16 40 1.40	16 4711
47	9.3	51.1	53.3	55.5	57.6	59.9	c	1 55.48	304	24	"	"	III	45.110	18 2 11.26	16 37 48.89	16 4718
48	9.0	5.7	7.9	10.0	12.3	14.5	c	4 10.08	304	46	10.0	11.7	III	42.100	18 4 25.82	16 16 45.15	16 4732
49	9.0	9.0	11.1	13.0	14.9	17.1	a	5 42.81	305	24	10.0	11.6	I	49.750	18 5 58.47	15 36 14.56	15 4854
50	8.9	46.0	48.1	50.4	52.4	54.6	c	5 50.30	305	24	"	"	III C	51.680	18 6 5.97	—15 42 5.18	—15 4856

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
51	9.3	13.8	16.0	18.0	20.4	22.5	c	6 18.14	305 24 10.0 11.6	III	52.380	18 6 33.80	−15 35 25.40	−15 4861
52	9.0	30.0	32.3	34.5	36.7	38.9	c	6 34.48	305 24 " "	V B	51.610	18 6 50.15	15 38 54.91	15 4865
53	8.3	26.5	30.7	32.9	35.2	37.4	b_3 c_4	7 35.11	305 24 " "	III	46.190	18 7 50.77	15 37 23.73	15 4874
54	9.3	42.2	44.4	48.7	50.3	52.8	c_4 d_3	7 40.08	305 24 " "	VI C	46.020	18 7 55.75	15 43 54.80	15 4876
55	9.2	4.2	6.3	8.5	10.7	12.8	c	9 8.50	305 24 " "	III B	42.760	18 9 24.16	15 41 42.28	15 4890
56	8.7	42.7	44.9	47.0	49.1	51.3	c	10 47.00	304 28 10.0 11.5	III	47.160	18 11 2.75	16 33 6.63	16 4786
57	8.5	33.5	35.8	37.9	40.0	42.2	c	11 37.88	305 34 10.0 11.7	III	44.170	18 11 53.51	15 28 0.54	15 4911
58	9.4	22.7	24.6	26.9	29.0	31.3	c	12 26.90	305 34 " "	III	41.740	18 12 42.53	15 28 46.90	15 4916
59	9.3	56.7	58.7	1.0	3.2	5.3	c	13 0.98	305 34 " "	III B	45.535	18 13 16.61	15 30 47.12	15 4921
60	8.6	17.0	19.3	21.3	23.6	25.7	c	13 21.38	305 22 10.0 11.6	V	46.860	18 13 37.03	−15 39 10.22	−15 4923
61	9.4	21.4	23.5	25.8	28.0	30.0	c	14 25.74	304 48 10.0 11.5	V	42.500	18 14 41.44	−16 14 35.15	−16 4816
62	9.3	4.7	6.8	8.9	11.2	13.3	c	15 8.98	304 58 10.0 10.6	V	47.315	18 15 24.66	16 3 2.46	16 4828
63	9.2	15.8	18.0	20.3	22.5	24.6	c	19 20.24	304 28 10.0 10.9	III	44.820	18 19 35.96	16 33 48.81	16 4864
64	9.0	57.0	59.2	1.3	3.6	5.7	c	20 1.36	305 14 10.0 11.5	III B	40.510	18 20 17.01	15 52 22.05	15 4968
65	9.3	16.2	18.4	20.6	22.7	25.0	c	21 20.58	305 14 " "	III A	42.270	18 21 36.21	15 45 19.16	15 4971
66	9.0	24.9	27.0	29.1	31.3	33.6	c	22 29.18	305 14 " "	III B	41.880	18 22 44.82	15 51 54.91	15 4977
67	8.9	30.0	32.0	34.3	36.5	38.6	c	23 34.28	304 50 10.0 11.6	III A	41.540	18 23 49.95	16 9 33.45	16 4899
68	8.8	1.9	3.9	6.0	8.2	10.6	c	24 6.12	304 50 " "	III B	43.410	18 24 21.79	16 15 26.05	16 4903
69	9.3	43.5	45.5	47.4	49.3	51.7	a	26 17.36	304 50 " "	I	48.770	18 26 33.02	16 10 27.59	16 4915
70	8.8	15.2	17.5	19.5	21.9	24.0	c	26 19.62	304 50 " "	III C	46.540	18 26 35.29	−16 17 38.09	−16 4916
71	8.9	45.4	47.6	49.7	51.9	54.0	c	26 49.72	305 12 10.0 12.5	V B	40.200	18 27 5.35	−15 54 26.76	−15 5006
72	8.7	0.7	2.9	5.0	7.3	9.4	c	28 5.06	305 12 " "	III	42.160	18 28 20.68	15 50 33.85	15 5016
73	9.4	37.4	39.7	41.6	43.9	46.0	c	29 41.72	305 12 " "	III A	39.530	18 29 57.32	15 48 8.39	15 5024
74	9.1	36.8	38.8	41.0	43.2	45.3	c	30 41.02	305 30 10.0 10.5	III	51.330	18 30 56.59	15 29 37.13	15 5029
75	9.4	55.6	57.9	0.1	2.3	4.5	c	34 0.08	305 38 10.0 10.7	III	42.320	18 34 15.63	15 24 28.43	15 5051
76	8.2	6.3	8.3	10.2	12.2	14.4	a	36 40.08	305 30 10.0 10.6	I C	48.210	18 36 55.64	15 36 59.67	15 5067
77	9.2	41.7	44.0	46.2	48.5	50.5	c	36 46.18	305 30 " "	III A	42.770	18 37 1.72	15 29 3.85	15 5069
78	9.0	42.3	44.5	46.6	48.8	50.9	c	37 46.62	305 40 10.0 11.9	III	42.570	18 38 2.15	15 22 21.61	15 5076
79	8.9	34.0	36.0	38.2	40.5	42.6	c	42 38.26	305 40 " "	III B	46.370	18 42 53.78	15 24 20.28	15 5099
80	9.4	28.3	30.4	32.5	34.8	36.9	c	44 32.58	305 40 " "	III B	49.135	18 44 48.09	−15 23 26.57	−15 5113
81	8.9	52.3	54.5	56.7	58.9	0.9	c	44 56.66	305 40 " "	V	42.680	18 45 12.17	−15 22 18.39	−15 5117
82	9.0	36.5	38.7	40.7	42.9	45.0	c	45 40.76	305 40 " "	V A	45.710	18 45 56.26	15 18 4.75	15 5125
83	9.0	36.9	38.9	41.2	43.3	45.4	c	47 41.14	304 44 10.0 12.0	III	46.820	18 47 56.73	16 16 59.21	16 5066
84	8.9	14.6	16.7	18.6	20.4	22.7	a	48 48.36	305 40 9.7 12.2	I	45.960	18 49 3.85	15 21 11.22	15 5146
85	9.0	33.5	35.7	37.9	40.0	42.3	c	53 37.88	304 44 10.0 12.4	III A	43.720	18 53 53.45	16 14 41.09	16 5108
86	9.5	59.2	1.3	3.3	5.6	7.7	c	54 3.42	304 44 " "	V B	43.765	18 54 18.99	16 21 10.32	16 5109
87	9.3	53.4	55.7	57.8	0.0	2.1	c	54 57.80	304 44 " "	III B	43.560	18 55 13.37	16 21 12.40	16 5113
88	9.0	23.5	25.6	27.7	30.0	32.2	c	55 27.80	304 44 " "	III	47.850	18 55 43.36	16 16 36.61	16 5116
89	8.9	50.7	52.9	55.0	57.3	59.6	c	56 55.10	304 52 10.0 12.0	III	50.120	18 57 10.63	16 7 52.37	16 5124
90	9.1	45.5	47.7	49.9	52.3	54.4	c	57 49.96	304 52 " "	III	46.560	18 58 5.49	−16 9 0.40	−16 5128
91	8.3	47.3	49.4	51.6	53.8	55.9	c	0 51.60	304 38 10.0 11.4	III	46.750	19 1 7.14	−16 22 56.70	−16 5153
92	9.3	56.7	58.9	1.0	3.2	5.3	c	2 1.02	305 38 10.0 11.6	III	46.610	19 2 16.46	15 22 56.05	15 5243
93	9.2	59.2	1.4	3.6	5.8	7.9	c	3 3.58	305 38 " "	III B	45.560	19 3 19.02	15 26 29.13	15 5247
94	9.3	33.2	35.2.	37.4	39.5	41.7	c	3 37.40	305 38 " "	V B	49.040	19 3 52.84	15 25 23.71	15 5251
95	8.4	20.5	22.4	24.2	26.2	28.4	a	4 54.09	305 46 10.0 11.6	III	48.110	19 5 9.51	15 14 25.93	15 5259
96	8.9	......	11.7	15.9	18.2	20.3	b_3 c_3	5 20.28	305 36 10.0 11.1	III C	50.240	19 5 35.72	15 30 11.82	15 5264
97	9.1	51.2	53.4	55.4	57.3	59.1	e	5 25.61	305 36 " "	V A	44.380	19 5 41.04	15 22 24.17	15 5265
98	9.0	32.2	34.4	36.6	38.5	40.3	e	6 6.64	305 4 10.0 10.5	VII	41.300	19 6 22.13	15 58 41.24	16 5195
99	9.0	14.8	16.9	18.8	20.6	23.0	a	9 48.74	304 32 10.0 12.0	I A	41.690	19 10 4.26	16 27 13.75	16 5223
100	8.9	46.7	48.9	50.9	53.2	55.3	c	9 51.00	304 32 " "	III	48.260	19 10 6.52	−16 28 24.74	−16 5224
101	9.1	13.4	15.6	17.6	19.8	21.9	c	10 17.66	304 32 " "	III	43.500	19 10 33.18	−16 29 55.95	−16 5231
102	9.0	28.7	30.8	32.9	35.0	37.3	c	10 32.94	304 32 " "	V C	49.890	19 10 48.47	16 34 20.60	16 5236
103	8.9	6.4	8.4	10.5	12.5	14.3	e	10 40.59	304 32 " "	VII A	41.930	19 10 56.11	16 27 13.37	16 5238
104	9.4	52.6	54.5	59.0	0.5	3.3	c_4 d_3	11 50.35	304 32 " "	VI B	45.620	19 12 5.87	16 32 30.29	16 5255
105	9.0	35.4	37.6	39.7	41.7	43.5	e	12 9.75	304 32 " "	VII A	42.260	19 12 25.26	16 27 6.57	16 5257
106	6.	40.3	42.4	44.6	46.9	48.9	c	15 44.62	304 52 10.0 12.0	III	47.620	19 16 0.09	16 8 34.14	16 5283
107	9.5	36.8	38.9	40.8	43.0	45.2	c	16 40.94	304 52 " "	III B	48.600	19 16 56.41	16 11 28.31	16 5288
108	8.6	34.1	36.3	38.4	40.7	42.9	c	17 38.48	305 0 10.0 11.2	III	48.580	19 17 53.93	16 0 15.11	16 5293
109	9.3	4.8	6.9	9.0	11.3	13.4	c	18 9.08	304 30 10.0 11.7	III	48.325	19 18 24.58	16 30 21.06	16 5296
110	9.0	46.6	48.7	50.4	52.4	54.8	a	20 20.35	305 36 10.0 11.6	I	48.970	19 20 35.73	−15 24 3.32	−15 5349
111	9.1	27.3	29.4	31.2	33.1	35.3	a	21 1.04	305 36 " "	I B	41.820	19 21 16.43	−15 29 33.40	−15 5353
112	8.0	34.5	36.6	38.7	40.9	43.2	c	22 38.78	305 42 10.0 12.4	III	48.100	19 22 54.15	15 18 20.12	15 5362
113	8.7	59.2	1.4	3.4	5.7	7.9	c	24 3.52	304 50 10.0 11.3	III	46.430	19 24 18.95	16 10 54.74	16 5333
114	9.0	11.8	14.0	16.0	18.3	20.4	c	25 16.10	304 30 10.0 11.5	III C	49.440	19 25 31.57	16 36 23.68	16 5340
115	9.3	57.6	59.9	1.7	3.7	5.7	a	26 31.65	304 30 " "	I	52.180	19 26 47.10	16 29 2.98	16 5345
116	9.4	35.2	37.3	39.5	41.9	44.0	c	26 39.58	304 30 " "	III B	53.220	19 26 55.04	16 31 57.80	16 5346
117	9.0	54.3	56.5	58.8	1.0	3.0	c	27 58.72	304 30 " "	III	51.140	19 28 14.17	16 29 24.02	16 5357
118	8.8	10.9	13.1	15.4	17.6	19.7	c	28 15.34	304 30 " "	V	44.220	19 28 30.79	16 31 38.09	16 5359
119	8.5	45.4	47.7	49.7	51.7	53.6	e	28 19.77	304 30 " "	VII B	42.480	19 28 35.23	16 35 26.25	16 5360
120	9.5	48.0	50.3	52.3	54.6	56.9	c	29 52.42	305 12 10.0 11.6	III A	42.930	19 30 7.80	−15 46 43.48	−15 5404
121	9.3	21.4	23.4	25.6	27.5	29.5	e	29 55.73	305 12 " "	VII C	45.125	19 30 11.12	−15 55 45.03	−16 5367
122	9.0	35.4	37.4	39.2	41.0	43.3	a	32 9.00	305 48 10.0 11.8	I	47.160	19 32 24.32	15 12 33.67	15 5411
123	9.7	40.0	42.1	44.1	46.0	47.8	e	32 14.23	304 58 10.0 12.0	VII	49.500	19 32 29.62	16 1 55.01	16 5383
124	9.4	25.2	27.3	29.4	31.6	33.7	c	33 29.44	304 58 " "	V B	45.900	19 33 44.83	16 6 16.06	16 5390
125	8.9	19.3	21.5	23.6	25.8	27.9	c	34 23.62	304 58 " "	III	47.960	19 34 39.01	−16 2 21.42	−16 5398

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
126	9.3	20.1	22.4	24.5	26.8	28.9	c	35 24.54	304 58 10.0 12.0	V A	42.580	19 35 39.92	−16 0 50.48	−16 5404
127	6.8	28.2	30.3	32.5	34.7	36.9	c	36 32.52	304 46 10.0 12.0	III C	45.790	19 36 47.93	16 21 29.19	16 5413
128	9.0	57.5	59.6	1.7	4.0	6.1	c	37 1.78	304 46 " "	III	44.480	19 37 17.18	16 15 28.00	16 5420
129	9.0	29.3	31.5	33.6	35.8	38.0	c	37 33.64	304 46 " "	III A	42.400	19 37 49.03	16 12 52.35	16 5423
130	9.3	23.2	25.5	27.6	29.9	32.0	c	39 27.64	305 30 10.0 11.6	III B	45.750	19 39 42.97	−15 34 14.21	−15 5458
131	9.1	8.8	11.0	13.0	15.4	17.4	c	40 13.12	305 30 " "	III B	44.850	19 40 28.44	−15 34 31.26	−15 5459
132	9.1	49.4	51.7	53.9	56.3	58.2	c	40 53.90	305 30 " "	III B	40.870	19 41 9.22	15 35 47.45	15 5465
133	9.4	45.3	47.4	49.6	51.9	54.0	c	41 49.64	305 30 " "	III	44.080	19 42 4.95	15 31 32.29	15 5467
134	8.9	23.6	25.7	27.8	29.9	32.0	c	44 27.80	305 50 10.0 11.5	III	44.800	19 44 43.08	15 11 16.78	15 5478
135	8.8	28.3	30.5	32.6	34.9	37.0	c	45 32.66	304 54 10.0 12.0	III	44.660	19 45 48.01	16 7 21.57	16 5447
136	9.4	34.5	36.6	38.7	40.5	42.8	a	47 8.38	305 44 10.0 11.7	I B	46.525	19 47 23.66	15 19 54.61	15 5494
137	9.0	6.4	8.6	10.8	12.9	15.0	c	47 10.74	305 44 " "	III	42.880	19 47 26.02	15 17 52.99	15 5495
138	8.7	33.8	36.0	38.2	40.3	42.5	c	50 38.16	305 2 10.0 11.0	III	48.360	19 50 53.48	15 58 9.17	16 5458
139	9.1	31.7	33.7	35.9	38.0	40.0	c	52 35.86	305 2 " "	III B	48.985	19 52 51.17	16 1 9.88	16 5471
140	9.1	54.4	56.6	58.8	1.0	3.2	c	53 58.80	305 2 " "	III	47.140	19 54 14.10	−15 58 31.62	−16 5477
141	9.1	47.5	49.6	51.8	54.0	56.1	c	54 51.80	305 2 " "	III	42.940	19 55 7.10	−15 59 51.96	−16 5480
142	8.6	33.0	35.1	37.3	39.5	41.7	c	56 37.32	304 52 10.0 11.3	III	45.215	19 56 52.63	16 9 8.14	16 5485
143	8.5	34.1	36.2	38.4	40.6	42.8	c	57 38.42	305 20 10.0 11.6	III	43.730	19 57 53.69	15 41 34.83	15 5541
144	9.1	15.0	16.5	20.8	23.0	25.2	b_2 c_3	58 25.14	305 2 10.0 11.0	III	44.560	19 58 40.43	15 59 19.86	16 5491
145	9.1	27.7	29.9	34.1	35.7	38.4	c_4 d_3	58 25.55	305 2 " "	VI A	41.140	19 58 40.83	15 57 12.28	16 5492
146	9.2	25.0	27.2	29.4	31.6	33.7	c	59 29.38	305 2 " "	III A	42.960	19 59 44.66	15 56 35.86	16 5499
147	9.0	47.7	49.7	51.8	54.2	56.3	(c)	59 51.94	305 2 " "	V B	45.430	20 0 7.23	16 2 17.56	16 5500
148	9.3	2.5	4.7	6.7	9.0	11.3	c	1 6.84	305 42 10.0 12.0	III B	45.370	20 1 22.07	15 22 14.37	15 5558
149	8.0	1.8	3.8	5.6	7.5	9.6	a	2 35.42	305 42 " "	I	45.015	20 2 50.64	15 19 5.97	15 5564
150	9.0	33.4	35.5	37.7	39.9	42.0	c	2 37.70	305 0 10.0 11.9	III	47.070	20 2 52.98	−16 0 30.12	−16 5509
151	9.7	53.6	55.8	57.8	59.9	1.7	e	16 27.98	304 54 10.0 11.5	VII B	50.120	20 16 43.22	−16 8 44.45	−16 5577

Reduction Elements. Zone 127.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 16.4....	−0.232	−0.199	−0.346	−0.224	−0.192	−0.318
16.5....	−0.217	−0.184	−0.289			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	20 Ophiuchi		24 Ophiuchi		ξ Ophiuchi		*o* Serpentis		α² Capricorni		β Capricorni	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	310 26 10.25		298 4 10.60		300 2 10.45		308 12 10.50		308 10 10.50		305 56 10.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.040	5 19.81		4 46.88		5 39.94	46.610	6 9.35	43.920	5 17.73	42.550	4 50.62
II Red. to Mer......	.070	0.10		0.23	45.090	0.18	.675	0.13	.990	0.13	.570	0.15
VI Inclination	.250		42.465	−1.68	.235	−0.67	.820		44.130		.710	
VII Refraction	.290	1 5.1	.425	1 43.8	.310	1 35.8	.875	1 10.5	.175	1 10.7	.730	1 16.7

	ρ Capricorni		Mayer 842	
	° ′ ″		° ′ ″	
CIRCLE READING.	302 52 9.90		310 50 10.00	
	r	′ ″	r	′ ″
I Microm. Eq......	46.610	6 9.33	42.240	4 44.58
II Red. to Mer......	.700	0.18	.270	0.10
VI Inclination	.840		.360	
VII Refraction	.825	1 25.9	.430	1 4.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
20 Ophiuchi	16 44 2.59	11	−0.60	+2.55	310 30 25.1	25.9
24 Ophiuchi	16 50 29.33	8	−0.65	+2.68	298 7 12.2	25.8
ε Ursae Minoris.....	16 56 46.97	7	−1.08	[+2.75]	43 16	....
ξ Ophiuchi	17 14 44.09	11	−0.64	+2.60	300 6 14.1	25.4
o Serpentis	17 35 32.22	11	−0.61	+2.51	308 17 9.5	26.0
51 H. Cephei S. P......	18 51 5.89	5	+1.65	[+2.96]	53 50	....
α² Capricorni	20 12 15.39	11	−0.61	+2.53	308 14 17.7	26.2
β Capricorni	20 15 8.43	11	−0.62	+2.54	305 59 44.8	26.3
ρ Capricorni	20 22 54.13	11	−0.63	+2.48	302 56 53.5	26.2
Mayer 842	20 26 40.57	11	−0.60	+2.51	310 53 50.3	26.3

h		s
17.102..........	*dt*	+2.585
	Hourly rate	−0.0218
		° ′ ″
	Adopted Equator Point..........	321 6 26.01

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
16 40	29.754	69.9	68.6
17 43	29.750	69.9	68.1
18 40	29.756	70.0	68.8
19 38	29.750	70.0	68.3
20 30	29.752	68.5	66.9

Notes.

24 Ophiuchi. Clouds.

44. Suspected double.

63. Faint close companion, n f.

89. Not seen double.

91. Faint companion south.

117. Double, mean observed.

α² Capricorni. Very foggy; has been so during past 15 or 20 minutes.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0.			D = Z. D. N. to 1895.0			R		
			304°	305°	306°	304°	305°	306°	304°	305°	306°
°	s	h m	s	s	s	"	"	"	"	"	"
304	−0.622	16 30	+14.131	+14.029	+13.928	+13.71	+13.45	+13.20	82.43	79.41	76.56
305	0.619	17 0	14.063	13.959	13.856	11.89	11.67	11.45	82.47	79.45	76.60
306	−0.615	17 30	13.984	13.879	13.774	9.82	9.63	9.45	82.51	79.49	76.63
		18 0	13.895	13.791	13.688	7.53	7.38	7.24	82.51	79.49	76.63
		18 30	13.796	13.696	13.593	5.06	4.95	4.85	82.45	79.44	76.58
		19 0	13.693	13.596	13.499	− 2.43	+ 2.37	+ 2.32	82.45	79.44	76.58
		19 30	13.585	13.493	13.402	− 0.28	− 0.29	− 0.31	82.49	79.47	76.61
		20 0	13.470	13.389	13.305	3.05	3.02	2.99	82.58	79.56	76.70
		20 30	+13.357	+13.282	+13.209	− 5.82	− 5.75	− 5.67	82.72	79.69	76.82

1895 JULY 19. ZONE 128. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ' " "		r	h m s	° ' "	°
1	9.0	19.3	21.4	23.6	25.7	28.0	c	58 23.60	303 50 10.0 11.1	III	46.930	16 58 38.68	−17 11 38.73	−17 4699
2	8.6	39.4	41.6	43.9	46.1	48.2	c	58 43.84	303 12 10.0 10.4	V	48.870	16 58 58.98	17 49 4.87	17 4703
3	9.6	51.6	53.9	56.2	58.3	0.4	c	1 56.08	303 12 " "	III B	42.375	17 2 11.22	17 54 20.35	17 4715
4	8.6	17.6	19.8	22.1	24.4	26.4	c	2 22.06	303 0 10.0 10.7	V	44.935	17 2 37.21	18 2 19.56	17 4718
5	8.9	57.8	0.1	2.3	4.5	6.6	c	3 2.26	303 0 " "	III C	48.530	17 3 17.42	18 7 35.18	18 4427
6	9.0	53.4	55.7	57.7	59.5	1.5	e	5 27.44	302 50 10.0 10.5	VII	42.410	17 5 42.60	18 13 8.68	18 4441
7	8.8	38.3	40.6	42.6	44.6	46.5	e	6 12.59	303 56 10.0 10.6	V	41.275	17 6 27.64	17 7 25.81	17 4742
8	8.5	35.1	37.3	39.5	41.7	43.8	c	10 39.48	303 14 10.0 10.2	III	45.255	17 10 54.59	17 48 8.70	17 4759
9	8.9	51.3	53.5	55.6	57.9	0.0	c	10 55.66	303 14 " "	V B	43.025	17 11 10.78	17 52 6.24	17 4760
10	8.9	54.3	56.4	58.5	0.7	2.9	c	15 58.56	303 52 10.0 10.1	III (A)	44.000	17 16 13.59	−17 7 13.71	−17 4788
11	8.8	14.8	17.0	19.1	21.2	23.4	c	16 19.10	303 52 " "	V B	41.455	17 16 34.14	−17 14 32.65	−17 4789
12	9.4	52.6	54.7	56.7	58.7	0.6	e	16 26.71	303 52 " "	VII B	40.620	17 16 41.75	17 14 49.97	17 4790
13	9.0	35.4	37.5	39.7	41.9	44.0	c	17 39.70	303 52 " "	V C	41.385	17 17 54.74	17 17 46.03	17 4795
14	8.7	27.4	29.4	31.6	33.8	36.0	c	22 31.64	303 6 10.0 9.2	III	49.540	17 22 46.72	17 54 43.13	17 4814
15	9.0	19.1	21.2	23.4	25.5	27.7	c	25 23.38	303 6 " "	III B	42.570	17 25 38.46	18 0 9.16	17 4835
16	9.1	58.3	0.5	2.7	4.9	7.0	c	28 2.68	303 58 10.0 11.0	III	44.875	17 28 17.67	17 4 7.27	17 4849
17	8.8	27.1	29.1	31.2	33.6	35.8	c	30 31.36	304 28 10.0 10.6	III	45.460	17 30 46.28	16 33 53.94	16 4564
18	9.3	58.2	0.3	2.5	4.7	6.8	c	31 2.50	304 28 " "	V A	40.010	17 31 17.42	16 32 24.47	16 4567'
19	9.0	38.1	40.3	42.4	44.3	46.1	e	31 12.38	304 28 " "	VII B	38.190	17 31 27.31	16 39 29.37	16 4568
20	9.2	35.0	37.2	39.3	41.5	43.7	c	32 39.34	302 58 10.0 10.7	III B	45.250	17 32 54.41	−18 7 14.79	−18 4595
21	9.1	4.5	6.8	8.9	11.1	12.4	c	34 8.94	302 58 " "	III C	45.105	17 34 24.01	−18 10 29.95	−18 4608
22	8.9	33.4	35.6	37.7	40.0	42.2	c	34 37.78	302 58 " "	III A	41.860	17 34 52.84	18 1 50.46	18 4612
23	9.0	57.5	59.7	2.0	4.2	6.3	c	35 1.94	302 58 " "	V B	50.105	17 35 17.00	18 5 42.31	18 4616
24	8.7	59.6	2.0	4.0	6.2	8.4	c	36 4.04	304 2 10.0 10.0	III	44.950	17 36 18.99	17 0 3.27	16 4591
25	8.5	59.6	1.6	3.8	6.1	8.2	c	38 3.86	303 24 10.0 10.2	III B	43.150	17 38 18.88	17 41 52.11	17 4903
26	8.9	45.4	47.5	49.8	52.0	54.0	c	39 49.74	303 24 " "	III	50.410	17 40 4.74	17 36 18.88	17 4914
27	9.0	49.0	51.0	53.2	55.5	57.6	c	52 53.26	303 16 10.0 10.4	III	44.840	17 53 8.24	17 46 1.46	17 4975
28	8.9	57.6	0.0	2.1	4.4	6.6	c	54 2.14	303 16 " "	III	42.900	17 54 17.12	17 46 38.18	17 4981
29	8.7	35.7	38.0	40.0	42.2	44.4	c	0 40.06	304 6 10.0 10.5	III	44.960	18 0 54.95	16 55 53.92	16 4707
30	8.9	21.9	24.0	26.1	28.5	30.5	c	2 26.20	303 16 10.0 10.1	III	49.650	18 2 41.13	−17 44 25.93	−17 5033
31	8.7	30.4	32.6	34.5	36.4	38.7	a	4 4.65	303 16 " "	I	47.615	18 4 19.58	−17 45 2.88	−17 5045
32	8.5	52.7	54.7	56.6	58.4	1.0	a	4 26.81	303 16 " "	I	42.825	18 4 41.74	17 46 34.67	17 5048
33	9.3	6.3	8.5	10.6	12.6	14.4	e	4 40.61	304 16 10.0 10.5	V A	40.855	18 4 55.43	16 43 56.94	16 4739
34	9.0	7.0	9.0	10.8	12.6	15.0	a	7 40.91	303 52 10.0 10.0	I	41.320	18 7 55.77	17 11 0.71	17 5074
35	9.1	37.1	39.3	41.5	43.6	45.8	c	7 41.46	303 52 " "	III	44.370	18 7 56.32	17 10 3.71	17 5075
36	9.0	7.7	9.9	12.1	14.2	16.5	c	9 12.08	304 0 10.0 9.6	III C	45.625	18 9 26.93	17 8 5.11	17 5088
37	8.9	37.5	39.6	41.7	44.0	46.2	c	9 41.80	304 0 " "	III A	40.170	18 9 56.63	17 0 8.04	17 5092
38	6.8	3.1	5.3	7.6	9.7	12.0	c	11 7.54	303 38 10.0 10.0	III	42.980	18 11 22.41	17 24 29.89	17 5112
39	8.9	23.5	25.7	27.8	30.1	32.2	c	12 27.86	303 54 10.0 10.0	III	41.840	18 12 42.70	17 8 50.51	17 5122
40	8.9	16.5	18.5	20.4	22.3	24.6	a	13 50.48	303 54 " "	I	48.000	18 14 5.31	−17 6 50.28	−17 5136
41	9.1	51.4	53.6	55.7	58.0	0.1	c	13 55.76	303 54 " "	III	50.470	18 14 10.59	−17 6 4.38	−17 5137
42	9.2	25.5	27.7	29.9	31.8	33.7	e	13 59.79	303 54 " "	V	(50).650	18 14 14.62	17 6 2.19	17 5139
43	9.3	49.8	52.1	54.2	56.2	58.0	e	14 24.12	303 54 " "	VII B	50.310	18 14 38.95	17 9 23.44	17 5142
44	8.7	22.7	24.9	26.7	28.7	30.6	e	14 56.77	303 54	....		18 15 11.60	17 11 43	17 5149
45	8.6	51.7	53.9	56.1	58.4	0.5	c	16 56.12	303 18 10.0 10.1	V	45.920	18 17 11.00	17 43 33.72	17 5171
46	......	48.3	50.5	52.4	54.2	56.3	e	17 22.40	303 50 10.0 11.0	VII	39.200	18 17 37.22	17 10 29.74	17 5175
47	9.0	40.3	42.6	44.7	47.0	49.1	c	18 44.74	303 50 " "	V C	45.340	18 18 59.57	17 18 8.21	17 5185
48	9.2	39.0	41.2	43.5	45.5	47.6	c	19 43.36	303 50 " "	III A	46.940	18 19 58.17	17 7 54.43	17 5190
49	8.6	48.1	50.2	52.5	54.6	56.7	c	20 52.42	303 50 " "	III B	43.880	18 21 7.24	17 15 21.43	17 5196
50	7.3	47.1	49.3	51.5	53.7	56.0	c	21 51.52	303 10 10.0 10.2	III	45.490	18 22 6.40	17 51 39.27	−17 5203
51	8.7	29.9	31.9	34.1	36.3	38.5	c	28 34.14	304 14 10.0 11.1	V	41.280	18 28 48.89	−16 48 55.51	−16 4934
52	9.0	56.4	58.5	0.6	2.8	5.1	c	31 0.68	303 2 10.0 10.1	III	42.530	18 31 15.53	−18 0 33.42	−18 5014

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
53	9.1	24.8	27.0	29.2	31.4	33.7	c	31 29.22	303 28 10.0 10.6	V 47.220	18 31 44.03	−17 33 2.99	−17 5267
54	8.9	26.7	29.1	31.0	33.3	35.5	c	35 31.12	302 58 10.0 10.0	III 41.450	18 35 45.96	18 4 52.86	18 5037
55	9.2	21.9	24.0	26.5	28.5	30.7	c	37 26.32	303 28 10.0 10.2	III A 43.620	18 37 41.10	17 30 53.52	17 5300
56	8.8	34.5	36.8	38.8	41.1	43.3	c	37 38.90	303 28 " "	V C 49.840	18 37 53.70	17 38 36.83	17 5301
57	8.8	25.6	27.6	29.5	31.4	33.7	a	43 59.74	302 58 10.0 9.8	I 46.690	18 44 14.54	18 3 7.96	18 5093
58	9.4	15.9	17.9	20.2	22.5	24.6	c	44 20.22	303 40 10.0 10.8	III 46.910	18 44 34.96	17 21 2.54	17 5336
59	8.9	52.1	54.2	56.3	58.6	0.8	c	44 56.40	303 12 10.0 9.7	III C 50.665	18 45 11.18	17 54 18.44	17 5342
60	8.9	7.0	9.2	11.4	13.6	18.0	c_2 d_1	45 9.24	303 12 " "	V 46.190	18 45 24.02	−17 49 19.40	−17 5344
61	7.6	43.1	45.4	47.2	49.2	51.1	e	45 17.24	303 46 10.0 10.3	VII 43.200	18 45 31.97	−17 16 15.87	−17 5347
62	9.1	2.0	4.0	5.6	7.5	10.0	a	49 35.99	303 6 10.0 9.1	I A 45.020	18 49 50.76	17 52 22.48	17 5378
63	8.9	44.0	46.3	48.4	50.6	52.8	c	49 48.42	303 6 " "	III C 44.420	18 50 3.20	18 2 17.26	18 5133
64	9.3	15.2	17.2	19.6	21.9	24.1	c	50 19.60	303 30 10.2 11.4	V C 48.665	18 50 34.35	17 36 54.27	17 5386
65	8.0	39.1	41.2	43.6	45.6	50.2	c_2 d_1	50 41.34	303 30 " "	V B 46.380	18 50 56.08	17 34 25.48	17 5388
66	9.4	27.2	29.3	31.5	33.7	35.8	c	52 31.50	303 30 " "	III C 48.890	18 52 46.24	17 36 48.12	17 5396
67	8.6	17.8	20.1	22.2	24.5	26.6	c	54 22.24	303 30 " "	III C 47.150	18 54 36.97	17 37 20.84	17 5409
68	8.8	43.4	45.6	47.8	50.0	52.1	c	55 47.78	303 30 " "	III A 41.020	18 56 2.49	[17 29 36.43]	17 5419
69	8.7	28.1	30.2	32.5	34.7	36.8	c	56 32.46	304 18 10.0 12.0	III 42.040	18 56 47.10	16 44 29.40	16 5123
70	9.1	......	6.3	8.5	10.6	12.7	c	57 8.43	303 12 10.0 10.5	III A 42.750	18 57 23.17	−17 47 4.25	−17 5437
71	9.0	0.8	3.0	5.1	7.3	9.4	c	58 5.12	303 12 " "	III B 39.880	18 58 19.86	−17 54 27.73	−17 5446
72	8.8	38.5	40.8	42.8	45.1	47.1	c	58 42.86	303 12 " "	III C 41.890	18 58 57.60	17 57 1.84	18 5193
73	9.3	43.6	45.7	47.7	50.1	52.2	c	0 47.86	303 0 10.0 9.9	III B 44.840	19 1 2.60	18 4 52.56	18 5204
74	9.0	6.6	8.7	11.0	13.3	15.3	c	1 10.98	303 0 " "	III 48.040	19 1 25.71	18 0 37.71	18 5208
75	9.5	5.7	7.9	10.0	12.2	14.3	c	2 10.02	304 16 10.0 10.0	III 43.610	19 2 24.64	16 45 58.50	16 5163
76	8.2	18.8	21.1	23.2	25.4	27.6	c	3 23.22	303 58 10.0 10.0	III 47.700	19 3 37.86	17 2 40.51	17 5495
77	9.1	33.1	35.2	37.3	39.7	41.8	c	4 37.42	303 8 10.0 10.1	III 45.300	19 4 52.14	17 53 28.64	17 5505
78	8.2	44.5	46.5	48.3	50.4	52.6	a	8 18.65	303 4 10.0 10.2	I C 43.960	19 8 33.36	18 4 18.17	18 5262
79	9.1	13.7	15.7	17.7	19.4	22.0	a	8 47.85	303 4 " "	I A 46.650	19 9 2.54	17 53 44.43	17 5536
80	9.0	23.4	25.4	27.3	29.2	31.5	a	9 57.34	304 16 10.0 10.5	I B 47.715	19 10 11.93	−16 47 48.47	−16 5225
81	8.7	45.7	47.7	49.6	51.5	53.7	a	10 19.61	304 16 " "	I 47.550	19 10 34.19	−16 44 38.40	−16 5232
82	9.0	41.3	43.3	45.8	47.7	50.2	c	10 45.66	304 16 " "	V 43.720	19 11 0.24	16 45 54.65	16 5241
83	9.0	15.5	17.5	19.5	21.4	23.7	a	10 49.49	304 16 " "	I B 50.160	19 11 4.07	16 47 1.25	16 5242
84	9.6	37.1	39.4	41.7	43.7	48.0	c_2 d_1	11 39.39	304 16 " "	V (B) 49.620	19 11 53.97	16 47 14.64	16 5252
85	8.8	10.0	12.0	14.2	16.3	18.6	c	12 14.22	304 16 " "	V C 44.380	19 12 28.81	16 52 7.53	16 5259
86	9.0	0.0	2.2	4.3	6.1	7.9	e	12 34.24	304 16 " "	VII A 50.040	19 12 48.81	16 40 38.86	16 5264
87	9.3	40.9	43.1	45.0	47.0	49.0	e	13 15.11	304 16 " "	VII C 46.040	19 13 29.69	16 51 36.33	16 5273
88	7.9	43.5	45.6	47.8	50.0	52.1	c	17 47.80	303 38 10.0 10.5	III 45.650	19 18 2.42	17 23 15.94	17 5611
89	9.0	55.6	57.8	0.1	2.2	4.3	c	19 0.00	303 10 10.0 10.6	III B 50.220	19 19 14.66	17 53 2.54	17 5618
90	8.9	14.6	16.8	19.1	21.1	23.3	c	19 18.98	303 10 " "	V 48.650	19 19 33.62	−17 50 20.61	−17 5620
91	9.2	5.4	7.6	9.8	12.1	14.3	c	33 9.84	303 24 10.0 11.0	III 43.490	19 33 24.41	−17 37 53.07	−17 5698
92	9.1	55.7	57.8	0.1	2.3	4.5	c	34 0.08	303 24 " "	III B 42.410	19 34 14.65	17 41 26.85	17 5704
93	9.0	12.2	14.3	16.4	18.6	20.9	c	39 16.48	303 40 10.0 11.0	III A 41.465	19 39 30.99	17 19 13.82	17 5737
94	9.2	38.8	40.8	43.1	45.3	47.5	c	40 43.10	303 40 " "	III B 42.210	19 40 57.62	17 25 27.80	17 5743
95	7.0	5.4	7.5	9.6	12.0	14.2	c	41 9.74	303 40 " "	III A 40.970	19 41 24.25	17 19 22.77	17 5746
96	8.6	36.9	39.1	41.2	43.4	45.6	c	41 41.24	303 40 " "	III A 42.520	19 41 55.74	17 18 52.89	17 5748
97	8.7	23.9	26.1	28.3	30.4	32.6	c	46 28.26	303 50 10.0 10.6	III A 43.555	19 46 42.73	17 8 31.26	17 5776
98	9.1	49.8	52.0	54.3	56.5	58.7	c	46 54.26	303 50 " "	III C 46.520	19 47 8.74	17 17 15.82	17 5779
99	8.9	4.7	6.9	9.1	11.3	13.4	c	48 9.08	303 20 10.0 10.8	III 47.970	19 48 23.59	17 40 22.88	17 5787
100	9.4	10.8	13.0	15.2	17.3	19.5	c	49 15.16	303 58 10.0 10.1	V 49.250	19 49 29.61	−17 1 57.74	−17 5794
101	9.0	21.7	23.8	26.0	28.1	30.4	c	50 26.00	304 22 10.0 10.5	III 48.380	19 50 40.41	−16 38 11.34	−16 5457
102	8.5	30.0	32.2	34.3	36.5	38.6	c	55 34.32	303 52 10.0 10.0	III 47.230	19 55 48.75	17 8 33.68	17 5832
103	9.2	17.7	19.7	21.7	23.6	25.8	a	59 51.71	303 58 10.0 10.5	I 44.065	20 0 6.12	17 3 31.10	17 5857
104	8.6	1.6	3.7	5.8	8.2	10.3	c	1 5.92	303 32 10.0 10.1	III 46.050	20 1 20.36	17 28 55.72	17 5860
105	9.3	4.5	6.7	8.9	11.1	13.3	c	7 8.90	303 22 10.0 10.1	III 49.210	20 7 23.32	17 37 53.91	17 5899
106	8.5	56.6	58.8	1.0	3.2	5.5	c	8 1.02	303 2 10.0 10.3	III 46.930	20 8 15.46	17 58 38.42	18 5624
107	9.6	43.9	46.1	48.3	50.5	52.5	c	14 48.26	303 42 10.0 9.2	III 44.580	20 15 2.63	17 19 20.09	17 5945
108	9.3	59.1	1.5	3.5	5.8	7.9	c	15 3.56	303 42 " "	V 43.375	20 15 17.93	17 19 44.53	17 5948
109	8.9	41.6	43.9	45.8	47.8	49.6	e	15 15.76	303 42 " "	VII B 44.880	20 15 30.13	17 22 30.40	17 5950
110	9.0	21.1	23.1	25.3	27.6	29.7	c	19 25.36	304 20 10.0 9.9	III 44.000	20 19 39.66	−16 41 27.70	−16 5596
111	6.	50.6	52.9	55.1	57.3	59.4	c	22 55.06	302 52 10.0 10.0	III 46.700	20 23 9.45	−18 8 39.53	−18 5689
112	9.4	12.0	14.0	16.2	18.5	20.6	c	24 16.26	303 38 10.0 10.0	III 48.820	20 24 30.59	17 21 56.05	17 5999
113	8.6	21.1	23.2	25.3	27.5	29.6	c	25 25.34	303 38 " "	III C 48.470	20 25 39.67	17 28 28.68	17 6007
114	9.0	16.4	18.5	20.7	23.0	25.0	c	26 20.72	303 38 " "	III A 42.900	20 26 35.04	17 20 33.72	17 6013
115	9.2	36.1	38.2	40.3	42.6	44.8	c	28 40.40	303 46 10.0 10.4	III 44.040	20 28 54.70	17 15 26.04	17 6021
116	7.6	34.1	36.4	38.4	40.6	42.7	c	29 38.44	304 8 10.0 10.6	III 47.920	20 29 52.71	16 52 10.08	17 6027
117	9.1	21.6	23.8	26.1	28.3	30.4	c	31 26.04	303 46 10.0 10.6	V 50.490	20 31 40.33	17 13 22.79	17 6037
118	9.1	28.7	31.0	33.1	35.0	36.8	e	32 2.90	303 20 10.0 9.0	VII 50.020	20 32 17.22	−17 39 34.96	−17 6040

Reduction Elements. Zone 128.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 19.4....	−0.324	−0.246	−0.312	−0.304	−0.220	−0.374
19.5....	−0.283	−0.194	−0.435			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

CIRCLE READING.	20 Ophiuchi		24 Ophiuchi		η Ophiuchi		ξ Ophiuchi		Mayer 811		Lalande 38458	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	310 26 10.00		298 4 10.70		305 26 10.30		300 2 9.50		298 10 10.05		313 58 10.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.070	5 20.27	42.200	4 44.52		5 42.15	45.080	5 39.81	41.870	4 38.04	44.240	5 23.46
II Red. to Mer.	.120	0.10	.280	0.23	45.210	0.13	.130	0.21	.915	0.23	.260	0.07
VI Inclination	.260		.385		.380	−0.67	.290		42.075		.445	
VII Refraction	.295	1 4.5	.425	1 42.9	.390	1 17.3	.320	1 35.0	.075	1 43.2	465	57.4

CIRCLE READING.	α^2 Capricorni		υ Capricorni	
	° ′ ″		° ′ ″	
	308 10 10.10		302 32 10.00	
	r	′ ″	r	′ ″
I Microm. Eq.	43.990	5 18.92	44.030	5 19.58
II Red. to Mer.	44.080	0.13	.095	0.18
VI Inclination	.180		.240	
VII Refraction	.215	1 10.4	.235	1 26.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
20 Ophiuchi	16 44 3.51	11	−0.74	+1.77	310 30 25.9	26.5
24 Ophiuchi	16 50 30.37	11	−0.80	+1.80	298 7 12.5	26.1
ε Ursae Minoris	16 56 48.37	8	−1.53	[+1.42]	43 16	....
η Ophiuchi	17 4 23.59	11	−0.76	+1.77	305 30 34.6	26.4
ξ Ophiuchi	17 14 45.07	11	−0.79	+1.79	300 6 14.5	25.8
λ Ursae Minoris	19 28 29.98	5	−8.88	[+4.39]	50 2	....
Mayer 811	19 57 33.86	11	−0.80	+1.80	298 13 5.1	26.1
Lalande 38458	20 2 32.77	11	−0.73	+1.71	314 2 36.1	25.9
α^2 Capricorni	20 12 16.34	11	−0.75	+1.76	308 14 18.8	27.1
υ Capricorni	20 34 7.10	11	−0.78	+1.77	302 36 3.1	26.2

h 16.972 . . . . *dt* . . . . s +1.782

Hourly rate . . . . −0.0068

Adopted Equator Point . . . . 321° 6′ 26.26″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
16 53	29.947	78.2	76.1
17 40	29.944	76.8	75.1
18 40	29.942	75.1	73.3
19 35	29.941	74.5	72.8
20 35	29.928	73.8	72.1

Notes.

III. Faint companion, s. f. λ Ursae Minoris. Star images very steady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1895.0			
			302°	303°	304°	305°	302°	303°	304°	305°
°	s	h m	s	s	s	s	″	″	″	″
303	−0.776	16 30	. . . . . .	+14.230	+14.130	+14.028	. . . . .	+13.90	+13.64	+13.37
304	0.771	17 0	+14.266	14.161	14.056	13.951	+12.28	12.04	11.80	11.56
305	−0.766	17 30	14.182	14.075	13.970	13.865	10.13	9.93	9.72	9.52
		18 0	14.083	13.978	13.873	13.770	+ 7.73	7.57	7.41	7.24
		18 30	. . . . . .	13.870	13.767	13.668	. . . . .	5.02	4.90	4.78
		19 0	. . . . . .	13.753	13.655	13.558	. . . . .	+ 2.34	+ 2.26	+ 2.18
		19 30	. . . . . .	13.629	13.538	13.447	. . . . .	− 0.45	− 0.48	− 0.52
		20 0	13.585	13.500	13.417	13.334	− 3.30	3.29	3.28	3.28
		20 30	+13.444	13.368	13.295	13.220	− 6.19	6.14	6.09	6.04
		21 0	. . . . . .	+13.236	+13.175	+13.109	. . . . .	− 8.95	− 8.85	− 8.76

APPARENT RIGHT ASCENSION.	*R*			
	302° 30′	303°	304°	305°
h m	″	″	″	″
17 0	86.56	84.92	81.79	78.80
17 30	86.66	85.02	81.88	78.89
18 0	86.80	85.15	82.02	79.01
18 30	86.96	85.31	82.17	79.16
19 0	87.02	85.37	82.22	79.21
19 30	87.08	85.43	82.28	79.27
20 0	87.12	85.47	82.32	79.30
20 30	87.16	85.51	82.36	79.34
21 0	87.20	85.55	82.40	79.38

1895 JULY 29. ZONE 129. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.9	59.4	1.5	3.7	6.0	8.1	c	28 3.74	303 16 10.0 11.2	III	45.490	17 28 9.10	−17 45 57.34	−17 4848
2	9.4	55.1	57.5	59.6	1.8	3.9	c	28 59.58	303 34 10.0 11.7	III	48.310	17 29 4.90	17 27 1.76	17 4852
3	9.3	55.1	57.2	59.2	1.5	3.6	c	29 59.32	305 52 10.0 12.0	III	48.025	17 30 4.41	15 9 0.52	15 4607
4	8.9	30.1	32.1	34.1	35.8	38.2	a	31 3.73	306 18 10.0 11.8	I	46.990	17 31 8.78	14 43 17.48	14 4697
5	9.3	8.8	11.1	13.1	15.1	16.7	e	32 43.41	306 28 10.0 11.2	VII A	42.175	17 32 48.42	14 31 38.16	14 4709
6	9.1	1.1	3.4	5.4	7.3	9.2	e	33 35.72	306 28 " "	V B	47.030	17 33 40.74	14 36 32.02	14 4715
7	9.4	20.2	22.4	24.6	26.8	29.1	c	37 24.62	303 38 10.0 11.0	III B	44.300	17 37 29.91	17 27 29.18	17 4898
8	8.6	18.0	20.2	22.3	24.6	26.7	c	38 22.36	303 38 " "	III	46.650	17 38 27.64	17 23 30.45	17 4906
9	9.4	51.6	53.9	56.0	58.2	0.3	c	45 56.00	306 20 10.0 10.6	III	47.330	17 46 1.00	14 41 7.67	14 4794
10	9.1	39.5	41.5	43.3	45.2	47.5	a	50 13.02	306 40 10.0 10.9	I	47.120	17 50 17.97	−14 21 7.68	−14 4824
11	9.0	26.5	28.7	30.8	32.9	35.2	c	50 30.82	305 56 10.0 10.6	III B	42.250	17 50 35.84	−15 9 57.81	−15 4724
12	9.0	……	43.7	45.8	48.1	50.1	c	50 45.85	305 56 " "	V A	43.930	17 50 50.86	15 2 58.79	15 4728
13	8.9	21.3	23.3	25.5	27.6	29.8	c	51 25.50	306 30 10.0 11.6	V	48.590	17 51 30.46	14 30 41.95	14 4828
14	9.2	12.7	14.9	17.1	19.4	21.4	c	53 17.10	305 56 10.0 11.1	III C	44.255	17 53 22.11	15 12 30.98	15 4752
15	8.7	38.3	40.4	42.5	44.7	46.8	c	53 42.54	305 56 " "	III B	46.630	17 53 47.55	15 8 32.40	15 4756
16	9.1	48.4	50.6	52.7	54.9	57.1	c	54 52.74	305 56 " "	III A	42.060	17 54 57.73	15 3 31.02	15 4768
17	7.0	24.8	27.0	29.2	31.3	33.6	c	55 29.18	303 54 10.0 10.1	III	41.125	17 55 34.38	17 9 10.13	17 4987
18	9.2	23.0	25.2	27.3	29.7	31.8	c	56 27.40	303 54 " "	III	45.950	17 56 32.60	17 7 37.10	17 4996
19	8.6	22.4	24.6	26.7	29.0	31.1	c	57 26.76	303 26 10.0 11.4	III	42.700	17 57 32.00	17 36 39.92	17 5001
20	8.7	4.0	6.2	8.3	10.5	12.6	c	59 8.32	305 44 10.0 11.8	III	45.790	17 59 13.32	−15 17 33.45	−15 4808
21	9.5	59.1	1.1	3.0	4.7	6.8	a	0 32.53	306 54 10.0 11.6	I	45.340	18 0 37.41	−14 7 37.22	−14 4882
22	9.3	41.8	44.0	45.7	47.6	49.8	a	1 15.41	306 42 10.0 11.4	I B	42.180	18 1 20.33	14 23 51.27	14 4887
23	9.1	30.8	32.9	34.7	36.6	38.8	a	2 4.38	306 42 " "	I A	39.800	18 2 9.29	14 18 8.06	14 4894
24	9.0	3.2	5.3	7.4	9.5	11.8	c	2 7.44	306 42 " "	III A	41.700	18 2 12.35	14 17 33.27	14 4895
25	9.4	7.2	9.2	11.1	13.0	15.4	a	3 40.85	306 20 10.0 11.3	I	46.450	18 3 45.78	14 41 16.38	14 4906
26	9.3	27.2	29.0	31.0	32.8	35.1	a	4 0.63	306 50 10.0 11.6	III	42.140	18 4 5.52	14 12 39.08	14 4908
27	9.2	18.1	19.4	23:7	25.9	28.0	b_2 c_3	4 28.01	306 50 " "	III	46.860	18 4 32.90	14 11 8.34	14 4910
28	9.0	6.2	7.6	12.0	14.1	16.4	b_2 c_3	5 16.33	303 38 10.0 11.3	III	43.940	18 5 21.52	17 24 12.83	17 5055
29	9.1	2.6	4.6	6.6	10.9	12.6	(c_3d_2)	9 2.44	306 8 10.0 11.1	V	45.465	18 9 7.37	14 53 36.85	14 4946
30	9.0	9.8	11.9	14.1	16.3	18.4	c	10 14.10	306 8 " "	III B	43.750	18 10 19.03	−14 57 21.28	−14 4955
31	8.9	4.6	6.7	8.5	10.3	12.6	a	11 38.24	306 8 " "	I	47.025	18 11 43.16	−14 53 3.15	−14 4969
32	9.2	24.7	26.8	28.6	30.5	32.6	a	11 58.35	306 8 " "	III B	43.900	18 12 3.27	14 57 17.78	14 4973
33	9.0	47.8	49.8	52.0	54.2	56.3	c	12 52.02	307 0 10.0 11.0	III	47.340	18 12 56.85	14 0 56.07	14 4988
34	9.1	8.8	11.0	13.2	15.3	17.4	c	13 13.14	307 0 " "	V	44.670	18 13 17.97	14 1 48.50	14 4991
35	9.6	10.5	12.4	14.3	16.3	18.5	a	14 44.29	304 48 10.0 10.9	III	46.180	18 14 49.33	16 13 23.42	16 4818
36	9.2	48.6	50.9	52.9	57.0	58.8	c_3 d_2	14 48.64	307 8 10.0 10.2	V (C)	45.900	18 14 53.46	13 59 50.39	14 5005
37	9.0	29.3	31.4	33.6	36.0	38.0	c	15 33.66	307 8 " "	V A	46.760	18 15 38.46	13 49 52.43	13 4947
38	8.4	25.1	27.2	29.4	31.5	33.7	c	16 29.38	306 36 10.0 11.8	V	43.600	18 16 34.24	14 26 8.49	14 5013
39	9.1	54.0	56.2	58.3	0.5	2.6	c	16 58.32	306 36 " "	V	48.110	18 17 3.18	14 24 41.78	14 5017
40	9.2	50.7	52.8	55.0	57.2	59.3	c	18 55.00	307 4 10.0 10.8	V	44.120	18 18 59.80	−13 57 56.99	−13 4968
41	8.0	25.5	27.7	29.8	32.0	34.1	c	19 29.82	307 4 " "	V B	41.610	18 19 34.63	−14 1 58.42	−14 5039
42	9.1	53.2	55.2	57.0	58.9	1.0	a	21 26.74	306 22 10.0 10.8	I C	47.160	18 21 31.61	14 45 22.99	14 5053
43	9.4	39.8	41.7	43.7	45.5	47.8	a	22 13.38	306 22 " "	I C	44.980	18 22 18.25	14 46 4.54	14 5062
44	9.2	11.7	13.7	16.0	18.3	20.2	c	22 15.98	306 22 " "	III B	43.710	18 22 20.85	14 43 17.36	14 5063
45	6.	20.7	22.8	25.0	27.0	29.2	c	23 24.94	306 22 " "	III A	40.665	18 23 29.80	14 37 46.77	14 5071
46	9.2	51.7	53.9	55.8	57.7	59.7	e	23 26.18	306 22 " "	VII B	46.610	18 23 31.04	14 42 24.22	14 5072
47	7.8	25.3	27.4	29.5	31.4	33.0	e	23 59.75	306 22 " "	VII	47.580	18 24 4.60	14 38 51.74	14 5077
48	9.3	27.8	29.8	32.0	34.2	36.3	c	25 32.02	306 56 10.0 10.4	III C	48.370	18 25 36.83	14 10 58.45	14 5090
49	8.7	8.0	10.2	12.3	14.5	16.6	c	26 12.32	306 56 " "	III	48.060	18 26 17.12	14 4 38.02	14 5095
50	9.0	33.1	35.2	37.5	39.6	41.7	c	27 37.42	306 56 " "	III (C)	48.580	18 27 42.22	−14 10 53.68	−14 5105
51	8.9	42.1	44.2	46.2	48.6	50.6	c	28 46.34	306 20 10.0 10.9	III A	44.000	18 28 51.18	−14 38 40.93	−14 5113
52	9.4	2.9	4.7	7.0	9.0	11.3	c	29 6.98	306 20 " "	III C	49.240	18 29 11.82	14 46 41.78	14 5117
53	9.3	……	……	……	……	……	……	……	306 20 " "	VII C	48.960	18 29 12	14 46 49.29	14 5118
54	8.8	59.3	1.4	3.4	5.3	7.3	e	29 33.75	306 20 " "	VII B	42.050	18 29 38.59	14 45 49.61	14 5124
55	8.7	16.6	18.7	20.8	23.1	25.2	c	31 20.88	306 0 10.0 10.4	III B	39.735	18 31 25.75	15 6 31.62	15 5030
56	8.9	32.0	34.1	36.4	38.6	40.6	c	31 36.34	306 0 " "	V	47.130	18 31 41.19	15 0 57.69	15 5032
57	9.3	1.5	3.5	7.9	9.5	12.2	c_4 d_3	31 59.34	306 0 " "	VI	46.350	18 32 4.19	15 1 13.14	15 5035
58	8.7	10.4	12.6	14.7	17.0	19.1	c	33 14.76	305 52 10.0 11.1	III A	41.090	18 33 19.62	15 7 36.33	15 5043
59	9.5	42.6	45.0	47.2	49.4	51.5	c	33 47.14	305 52 " "	V	41.370	18 33 52.00	15 10 47.49	15 5048
60	9.1	19.1	21.1	23.1	25.1	27.0	e	33 53.43	305 52 " "	VII C	49.220	18 33 58.30	−15 14 43.77	−15 5049
61	8.9	21.5	23.6	25.8	28.1	30.2	c	35 25.84	307 4 10.0 11.5	III	45.570	18 35 30.58	−13 57 21.71	−13 5071
62	9.3	34.2	36.3	38.6	40.7	42.8	c	36 38.52	306 16 10.0 11.2	III	48.555	18 36 43.33	14 44 26.17	14 5158
63	9.0	15.4	17.0	21.3	23.5	25.6	b_2 c_3	37 25.57	306 16 " "	III	41.100	18 37 30.38	14 46 48.96	14 5163
64	9.6	30.3	32.4	34.7	36.9	39.0	c	37 34.66	306 16 " "	V	44.610	18 37 39.47	14 45 42.89	14 5164
65	9.3	50.3	52.4	54.5	56.7	58.8	c	39 54.54	306 44 10.0 11.0	III	42.410	18 39 59.30	14 18 21.89	14 5181
66	8.5	56.3	58.3	0.4	2.7	4.7	c	41 0.48	306 26 10.0 11.0	III A	40.220	18 41 5.26	14 33 48.93	14 5187
67	9.4	51.4	53.8	55.8	58.0	0.0	c	41 55.80	306 26 " "	III B	47.810	18 42 0.58	14 37 51.60	14 5192
68	8.9	55.2	57.2	59.3	1.5	3.7	c	42 59.38	305 52 10.0 11.2	III	48.960	18 43 4.21	15 8 17.26	15 5100
69	9.3	19.7	22.0	24.0	26.2	28.4	c	43 24.06	305 52 " "	III C	45.410	18 43 28.90	15 15 51.42	15 5102
70	8.9	52.3	54.4	56.6	58.9	1.0	c	43 56.64	305 52 " "	III	44.430	18 44 1.47	−15 9 43.89	−15 5107

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	'	"	"		r	h m s	° ' "	°
71	9.4	59.7	1.8	4.0	6.3	8.3	c	45 4.02	307	6	10.0	11.0	III A	42.670	18 45 8.73	—13 52 58.86	—13 5122
72	9.1	33.2	35.5	37.7	40.0	41.9	c	45 37.66	307	6	"	"	III C	46.230	18 45 42.38	14 1 31.86	14 5211
73	9.3	3.7	5.8	8.0	10.2	12.2	c	47 7.98	307	6	"	"	III	45.060	18 47 12.68	13 55 27.63	13 5133
74	9.0	41.5	43.5	45.2	47.2	49.5	a	48 14.94	307	6	"	"	I	47.270	18 48 19.64	13 54 43.35	13 5138
75	9.1	19.5	21.6	23.8	25.9	28.0	c	48 23.76	305	54	10.0	10.3	III	43.720	18 48 28.56	15 7 56.34	15 5138
76	9.3	28.3	30.5	32.4	34.4	36.6	a	50 2.16	306	2	10.0	10.6	I C	48.370	18 50 6.95	15 4 50.88	15 5152
77	9.0	59.4	1.5	3.7	5.8	7.9	c	50 3.66	306	2	"	"	V A	44.080	18 50 8.44	14 56 34.52	14 5228
78	8.6	54.9	56.9	59.0	1.2	3.4	c	50 59.08	306	2	"	"	III	45.840	18 51 3.86	14 59 14.29	15 5154
79	9.2	46.0	48.2	50.4	52.5	54.6	c	52 50.34	306	12	10.0	11.2	III B	40.590	18 52 55.10	14 54 6.95	14 5242
80	9.4	1.5	3.7	6.0	8.1	10.2	c	54 5.90	306	12	"	"	III	47.550	18 54 10.65	—14 48 39.67	—14 5248
81	9.1	37.7	39.9	42.0	44.2	46.5	c	55 42.06	306	22	10.0	10.6	III	44.720	18 55 46.80	—14 39 33.31	—14 5256
82	9.5	28.4	30.3	32.1	34.2	36.5	a	57 1.96	306	22	"	"	I	43.050	18 57 6.68	14 40 3.42	14 5267
83	8.7	12.3	14.4	16.4	18.7	20.7	c	57 16.50	306	0	10.0	10.9	III	44.910	18 57 21.26	15 1 29.98	15 5199
84	9.1	29.7	31.8	34.0	36.2	38.4	c	58 34.02	307	4	10.0	11.0	III	50.500	18 58 38.67	13 55 39.46	13 5210
85	9.4	59.9	2.0	4.2	6.3	8.5	c	59 4.18	307	4	"	"	III B	48.050	18 59 8.84	13 59 39.58	14 5280
86	9.0	13.2	15.3	17.4	19.7	21.7	c	0 17.46	306	0	10.0	10.6	III	46.510	19 0 22.20	15 0 58.39	15 5226
87	8.8	22.8	24.9	27.0	29.2	31.3	c	1 27.04	307	10	10.0	11.0	III A	42.060	19 1 31.67	13 49 4.85	13 5231
88	9.4	32.7	34.9	37.0	39.3	41.2	c	2 37.02	307	10	"	"	III C	49.100	19 2 41.67	13 56 30.89	14 5296
89	9.3	17.3	19.3	21.4	23.6	25.7	c	3 21.46	307	4	10.0	11.5	III C	45.160	19 3 26.12	14 3 46.26	14 5302
90	9.3	21.2	23.4	25.5	27.7	29.7	c	4 25.50	307	4	"	"	III B	49.850	19 4 30.15	—13 59 3.00	—14 5311
91	9.3	18.1	20.2	22.0	24.1	26.3	a	5 51.70	307	4	"	"	I A	41.690	19 5 56.33	—13 55 8.82	—13 5264
92	8.7	45.7	47.9	49.7	51.6	54.0	a	6 19.72	304	26	10.0	11.5	III	44.370	19 6 24.59	16 35 41.38	16 5196
93	9.2	32.7	34.7	36.6	38.4	40.7	[illegible]	7 6.30	306	22	10.0	11.2	III C	44.590	19 7 11.00	14 45 57.90	14 5325
94	9.3	16.0	17.4	21.7	23.7	26.0	b_2 c_3	7 25.96	306	22	"	"	III A	42.220	19 7 30.64	14 37 1.74	14 5332
95	8.5	36.1	38.2	40.4	42.7	44.7	c	7 40.42	306	22	"	"	V A	42.850	19 7 45.10	14 36 51.09	14 5333
96	9.0	37.3	38.7	43.0	45.0	47.2	b_2 c_3	8 47.24	306	22	"	"	III	48.720	19 8 51.92	14 38 11.95	14 5343
97	9.5	56.3	58.5	0.6	5.0	6.6	c_3 d_2	8 56.39	306	22	"	"	V (A)	44.020	19 9 1.08	14 36 28.19	14 5344
98	9.4	25.2	27.3	29.4	31.6	33.5	c	9 29.40	306	22	"	"	V	48.620	19 9 34.08	14 38 14.95	14 5348
99	9.3	1.9	4.0	6.0	7.9	9.8	e	9 36.34	306	22	"	"	V C	52.920	19 9 41.02	14 43 18.39	14 5349
100	9.3	10.3	12.5	14.5	16.5	18.7	c	11 14.50	306	22	"	"	III C	50.050	19 11 19.18	—14 44 11.76	—14 5366
101	9.0	38.7	41.1	43.1	45.3	47.4	c	11 43.12	306	22	"	"	V B	50.830	19 11 47.80	—14 40 45.32	—14 5371
102	8.8	51.4	53.7	55.7	58.0	0.0	c	12 55.76	306	22	"	"	III B	43.110	19 13 0.44	14 43 11.52	14 5380
103	9.3	42.3	44.5	46.2	48.0	50.3	a	14 15.94	306	22	"	"	I C	45.165	19 14 20.61	14 45 43.19	14 5390
104	8.6	18.8	21.0	23.1	25.4	27.4	c	14 23.14	306	22	"	"	III	48.640	19 14 27.80	14 38 11.65	14 5392
105	9.3	19.7	21.4	25.5	27.6	29.7	b_2 c_3	16 29.78	306	40	10.0	11.5	III	51.660	19 16 34.41	14 19 12.09	14 5406
106	8.9	52.0	54.2	56.2	58.5	0.5	c	16 56.28	306	40	"	"	V	52.665	19 17 0.90	14 18 54.00	14 5409
107	9.3	38.2	40.3	42.3	44.1	46.0	e	17 12.64	306	40	"	"	V C	47.540	19 17 17.28	14 26 58.22	14 5413
108	9.0	40.3	42.3	44.3	46.6	48.7	c	18 44.44	306	16	10.0	11.6	III B	44.370	19 18 49.09	14 48 45.51	14 5422
109	9.2	0.2	2.5	4.5	6.7	9.0	c	19 4.58	306	16	"	"	V (B)	41.100	19 19 9.23	14 49 49.71	14 5425
110	8.7	34.2	36.3	38.5	40.7	43.0	c	19 38.54	306	16	"	"	III A	41.070	19 19 43.18	—14 43 19.93	—14 5427
111	8.3	29.4	31.0	35.2	37.5	39.6	b_2 c_3	20 39.55	306	16	"	"	III	46.080	19 20 44.19	—14 44 58.83	—14 5435
112	9.1	31.4	33.7	35.7	40.0	41.8	c_3 d_2	22 31.50	306	8	10.0	11.1	V	45.220	19 22 36.14	14 53 16.69	14 5439
113	8.6	18.4	20.7	22.5	24.5	26.4	e	22 52.97	306	46	10.0	11.5	V C	44.690	19 22 57.57	14 21 50.86	14 5441
114	8.9	2.5	4.6	6.7	9.0	11.2	c	24 6.80	306	46	"	"	V A	43.040	19 24 11.39	14 12 40.96	14 5446
115	8.4	9.5	11.6	13.6	15.9	18.0	c	25 13.72	306	18	10.0	11.0	III B	45.580	19 25 18.35	14 46 20.48	14 5450
116	9.1	51.3	53.3	55.5	57.7	59.9	c	25 55.54	306	18	"	"	III	48.980	19 26 0.16	14 42 1.73	14 5453
117	9.2	46.9	49.0	51.2	53.3	55.3	c	26 51.14	306	18	"	"	III C	47.830	19 26 55.76	14 48 49.68	14 5458
118	9.0	48.6	50.7	52.8	55.0	57.2	c	27 52.86	306	18	"	"	III A	43.610	19 27 57.48	14 40 28.80	14 5462
119	9.3	4.6	6.7	9.0	11.0	13.2	c	29 8.90	306	18	"	"	III C	44.830	19 29 13.52	14 49 46.55	14 5466
120	9.3	......	28.0	30.0	31.9	33.7	e	30 0.35	306	34	10.0	11.2	V (A)	42.760	19 30 4.94	—14 24 45.16	—14 5470
121	9.2	50.7	53.0	55.0	56.8	58.6	e	30 25.27	306	34	"	"	VII	46.020	19 30 29.86	—14 26 58.85	—14 5472
122	5.5	18.1	20.2	22.0	23.9	26.1	a	31 51.70	306	34	"	"	III B	42.100	19 31 56.28	[14 31 24.38]	14 5479
123	8.3	31.4	33.6	35.5	37.4	39.3	e	32 5.94	306	50	10.0	11.0	VII	46.460	19 32 10.50	14 10 49.29	14 5480
124	8.0	20.0	22.0	24.1	26.4	28.3	c	33 24.16	307	8	10.0	10.5	V	43.230	19 33 28.69	13 53 49.18	13 5427
125	8.5	18.0	20.1	22.3	24.5	26.6	c	34 22.30	306	44	10.0	11.6	III	47.650	19 34 26.85	14 16 23.22	14 5498
126	9.3	58.2	59.9	4.4	5.9	8.7	c_4 d_3	34 55.87	306	44	"	"	VI B	47.240	19 35 0.43	14 19 46.43	14 5500
127	9.3	44.6	46.7	48.5	50.3	52.7	a	36 18.18	306	44	"	"	III B	44.370	19 36 22.73	14 20 38.81	14 5511
128	9.2	16.0	18.2	20.2	22.5	24.5	c	36 20.28	306	44	"	"	V	41.190	19 36 24.83	14 18 27.90	14 5512
129	8.6	15.3	17.6	19.7	21.9	23.9	c	37 19.68	306	34	10.0	10.6	III	42.360	19 37 24.24	14 28 4.77	14 5518
130	9.3	40.8	42.9	45.0	47.3	49.4	c	38 45.08	306	34	"	"	III	43.110	19 38 49.63	—14 27 49.93	—14 5527
131	9.1	47.3	49.3	51.0	52.9	55.1	[illegible]	40 20.70	306	56	10.0	11.4	I A	41.600	19 40 25.21	—14 3 0.02	—14 5537
132	9.3	22.6	24.8	26.7	29.0	31.1	c	40 26.84	306	56	"	"	III B	41.360	19 40 31.36	14 9 34.90	14 5539
133	9.5	18.3	20.4	22.1	24.0	26.5	[illegible]	41 51.86	306	56	"	"	I B	43.840	19 41 56.37	14 8 45.17	14 5548
134	8.0	17.1	19.3	21.5	23.6	25.7	c	42 21.44	307	4	10.0	11.0	III	45.650	19 42 25.93	13 56 58.58	14 5555
135	8.9	12.8	15.0	17.1	19.5	21.5	c	43 17.18	306	22	10.0	10.7	III	48.600	19 43 21.72	14 38 3.67	14 5559
136	8.8	11.4	13.5	15.3	17.2	19.5	a	44 44.97	306	56	10.0	10.5	I C	48.310	19 44 49.48	14 10 32.23	14 5565
137	9.5	46.0	48.0	50.2	52.3	54.4	c	44 50.18	306	56	"	"	III	48.060	19 44 54.68	14 4 12.19	14 5566
138	9.1	20.4	22.5	24.6	26.8	29.0	c	45 24.66	306	6	10.0	11.2	III A	46.910	19 45 29.22	14 51 20.57	14 5571
139	8.3	53.8	56.0	58.0	0.3	2.5	c	45 58.12	306	6	"	"	V (C)	44.240	19 46 2.69	15 1 54.35	15 5484
140	8.2	19.0	21.1	23.3	25.5	27.5	c	47 23.28	306	6	"	"	III A	46.150	19 47 27.83	—14 51 34.56	—14 5578
141	9.2	16.5	18.6	20.7	23.0	25.1	c	48 20.78	306	58	10.0	10.9	III B	44.020	19 48 25.27	—14 6 41.65	—14 5582
142	9.4	55.3	57.5	59.5	1.8	3.9	c	48 59.60	306	58	"	"	III B	45.780	19 49 4.09	14 6 7.68	14 5583
143	9.0	19.8	22.0	24.2	26.4	28.5	c	49 24.18	306	58	"	"	III	46.380	19 49 28.66	—14 2 42.78	—14 5585

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
144	9.4	32.0	34.0	36.1	38.5	40.6	c	50 36.24	306 48 10.0 11.2	III B 42.510	19 50 40.74	—14 17 10.26	—14 5593
145	9.3	40.0	42.0	44.1	46.4	48.5	c	52 44.20	306 48 " "	III B 43.760	19 52 48.69	14 16 45.66	14 5603
146	8.1	51.9	53.7	55.7	57.5	59.8	a	55 25.33	306 48 " "	I 45.570	19 55 29.80	14 12 55.35	14 5613
147	9.4	22.5	24.6	26.6	29.0	31.0	c	55 26.74	306 48 " "	III 43.000	19 55 31.21	14 13 46.19	14 5614
148	7.9	13.8	15.9	18.0	20.3	22.3	c	56 18.06	307 6 10.0 11.1	III 45.810	19 56 22.50	13 54 51.27	14 5618
149	9.4	46.0	48.4	50.5	52.7	54.9	c	57 50.50	306 20 10.0 10.7	III 46.240	19 57 55.00	14 40 44.90	14 5626
150	9.3	51.5	53.7	55.8	58.0	0.2	c	58 55.84	306 8 10.0 11.0	III 43.730	19 59 0.34	—14 53 33.07	—15 5547
151	9.3	0.3	2.5	4.5	6.6	8.7	c	0 4.52	307 16 10.0 11.0	III B 40.950	20 0 8.94	—13 49 36.34	—13 5570
152	9.1	23.6	25.5	27.6	30.0	32.0	c	0 27.74	307 16 " "	V 46.765	20 0 32.15	13 44 32.70	13 5572
153	9.1	13.4	15.6	17.7	19.9	22.0	c	1 17.72	306 14 10.0 11.9	III 49.630	20 1 22.20	14 45 38.43	14 5640
154	8.7	20.8	22.7	24.6	26.5	28.9	a	2 54.35	306 28 10.0 11.7	I 46.280	20 2 58.82	14 32 40.24	14 5648
155	9.4	21.1	23.2	25.1	26.9	29.0	a	3 54.71	306 28 " "	I B 50.200	20 3 59.16	14 34 37.79	14 5652
156	9.1	52.9	55.6	57.1	1.3	3.5	b_1 c_2	4 5.64	306 28 " "	II B 51.450	20 4 10.10	14 34 14.62	14 5654
157	9.2	27.3	28.8	33.0	35.0	37.4	b_2 c_3	4 37.29	307 10 10.0 12.1	III 46.220	20 4 41.70	13 50 40.36	13 5598
158	9.1	37.2	40.0	41.5	45.6	47.9	b_1 c_2	5 49.98	307 0 10.0 11.3	II (B) 43.890	20 5 54.41	14 4 38.00	14 5664
159	9.2	23.0	24.5	28.6	30.9	33.1	b_2 c_3	6 33.01	307 0 " "	III 49.820	20 6 37.43	13 59 31.58	14 5666
160	9.5	52.6	54.8	57.0	59.2	1.0	c	6 56.92	307 0 " "	III 53.210	20 7 1.33	—13 58 26.41	—14 5668
161	8.8	10.0	12.1	16.2	17.7	20.4	c_4 d_3	7 7.74	307 0 " "	VI C 51.560	20 7 12.16	—14 5 25.88	—14 5670
162	9.2	5.8	8.0	9.9	11.8	13.7	e	7 40.36	307 0 " "	V 52.250	20 7 44.77	13 58 45.96	14 5671
163	9.0	57.7	0.0	1.9	3.9	5.7	e	8 32.38	307 12 10.0 10.9	V 50.000	20 8 36.77	13 47 28.57	13 5616
164	.....	36.9	39.0	41.2	43.3	45.4	c	9 41.16	305 54 10.0 11.0	V 50.980	20 9 45.64	15 5 12.90	15 5597
165	9.4	21.4	23.5	25.7	27.5	29.2	e	9 55.81	305 54 " "	VII C 50.925	20 10 0.30	15 11 40.89	15 5599
166	9.1	36.3	38.9	40.7	44.8	46.9	b_1 c_2	11 49.07	306 44 10.0 11.5	II 47.670	20 11 53.49	14 16 11.24	14 5703
167	9.2	36.6	38.7	40.9	43.1	45.3	c	12 40.92	305 56 10.0 11.5	III B 41.300	20 12 45.39	15 9 29.47	15 5613
168	9.3	17.5	19.7	22.0	24.0	26.0	c	13 21.84	305 56 " "	III B 40.710	20 13 26.31	15 9 40.59	15 5615
169	9.2	27.4	29.6	31.7	34.0	36.1	c	14 31.76	305 56 " "	III A 40.540	20 14 36.22	15 3 14.87	15 5622
170	8.0	0.7	3.0	4.9	7.1	9.3	c	15 5.00	305 56 " "	III 42.020	20 15 9.46	—15 6 1.72	—15 5626
171	3.0	14.9	17.0	19.2	21.4	23.5	c	15 19.20	305 56 " "	III 42.690	20 15 23.65	—15 5 48.79	—15 5629
172	9.4	56.2	58.4	0.3	2.2	4.0	e	15 30.58	305 56 " "	V B 44.620	20 15 35.04	15 8 26.51	15 5631
173	8.6	42.0	44.2	46.2	48.4	50.6	c	17 46.28	306 26 10.0 11.0	III 46.310	20 17 50.68	14 34 37.53	14 5732
174	8.9	24.2	26.3	28.5	30.7	32.8	c	18 28.50	307 18 10.0 11.3	III 44.640	20 18 32.85	13 43 6.95	13 5661
175	9.2	33.4	35.5	37.5	39.8	41.9	c	19 37.62	305 56 10.0 10.3	III B 44.040	20 19 42.06	15 8 35.61	15 5656
176	9.2	14.9	17.0	19.0	21.2	23.3	c	20 19.08	305 56 " "	III A 44.470	20 20 23.51	15 1 58.52	15 5661
177	9.0	19.2	21.2	23.3	25.5	27.7	c	21 23.38	305 56 " "	III B 49.850	20 21 27.81	15 6 43.66	15 5670
178	9.1	45.2	47.3	49.5	51.6	53.7	c	22 49.46	305 56 " "	III A 44.690	20 22 53.88	15 1 53.63	15 5679
179	9.3	18.2	20.3	22.4	24.5	26.8	c	25 22.44	307 6 10.0 10.6	III 44.470	20 25 26.78	13 55 9.28	14 5765
180	9.1	38.2	40.1	41.8	43.8	46.0	a	27 11.54	307 14 10.0 10.8	I C 45.880	20 27 15.87	—13 53 6.11	—14 5776
181	9.1	50.5	52.6	54.5	56.2	58.5	a	27 24.01	307 14 " "	III 44.010	20 27 28.34	—13 47 17.11	—13 5696
182	9.3	39.1	42.0	43.3	47.6	49.7	b_1 c_2	27 51.87	307 14 " "	II C 44.820	20 27 56.20	13 53 26.98	14 5780
183	9.1	31.2	33.2	35.3	37.5	39.6	c	28 35.36	307 14 " "	III A 44.240	20 28 39.68	13 43 57.04	13 5702
184	9.3	54.3	56.5	58.5	0.8	3.0	c	28 58.62	307 14 " "	III A 44.260	20 29 2.94	13 43 56.56	13 5704
185	9.2	31.4	33.7	35.6	37.6	39.5	e	29 5.97	306 14 10.0 10.6	VII 44.950	20 29 10.35	14 47 3.96	14 5786
186	9.1	48.4	50.4	52.4	54.3	56.3	e	30 22.86	306 50 10.0 11.0	V 47.470	20 30 27.20	14 10 12.27	14 5794
187	9.1	23.9	26.0	28.1	30.0	31.8	e	30 58.42	306 34 10.0 11.2	VII 44.450	20 31 2.78	14 27 11.88	14 5797
188	9.1	7.2	9.5	11.5	13.7	15.9	c	32 11.56	306 52 10.0 12.0	V 45.500	20 32 15.89	14 8 49.01	14 5802
189	9.5	8.3	10.2	14.3	16.0	18.6	c_4 d_3	33 5.90	306 4 10.0 11.0	VI A 43.490	20 33 10.27	14 54 15.55	15 5736
190	9.1	39.5	41.9	43.7	45.7	47.6	e	33 14.05	306 4 " "	VII C 46.370	20 33 18.43	—15 3 1.76	—15 5739
191	9.0	23.6	25.7	30.0	31.6	34.2	c_4 d_3	35 21.45	306 8 10.0 11.6	VI 48.250	20 35 25.81	—14 51 58.28	—15 5755
192	9.4	36.7	39.0	41.0	42.8	44.8	e	36 11.35	306 50 10.0 11.1	V B 40.660	20 36 15.67	14 15 34.94	14 5821
193	9.4	17.0	19.1	21.2	23.3	24.9	e	36 51.60	306 50 " "	V A 39.760	20 36 55.92	14 9 23.35	14 5826
194	9.3	36.0	38.1	40.2	44.4	46.1	c_3 d_2	37 35.96	306 50 " "	V B 45.260	20 37 40.28	14 14 6.31	14 5829
195	9.2	32.2	34.3	36.6	38.7	40.8	c	38 36.52	306 56 10.0 11.2	III 48.530	20 38 40.82	14 3 48.16	14 5837
196	9.3	21.6	23.6	25.7	27.9	29.9	c	43 25.74	306 10 10.0 11.5	V 44.030	20 43 30.07	14 51 16.65	15 5800
197	9.5	56.4	58.5	0.7	2.5	4.4	e	43 30.89	306 10 " "	VII B 43.750	20 43 35.22	14 54 36.86	15 5802
198	8.9	7.3	9.3	11.4	13.7	15.8	c	45 11.50	306 26 10.0 10.7	III 46.740	20 45 15.82	14 34 22.53	14 5864
199	9.0	37.9	40.1	42.2	44.5	46.6	c	45 42.26	306 50 10.0 11.0	V C 43.700	20 45 46.56	14 17 46.85	14 5866
200	9.0	23.2	25.4	27.4	29.4	31.0	e	45 57.78	306 50 " "	VII A 45.790	20 46 2.07	—14 7 26.80	—14 5867
201	9.1	53.0	55.1	57.3	59.5	1.6	c	46 57.30	306 50 " "	V A 42.965	20 47 1.58	—14 8 19.43	—14 5871
202	9.0	52.7	54.8	56.9	59.0	1.2	c	47 56.92	306 12 10.0 11.6	V 48.290	20 48 1.23	14 47 53.67	14 5875
203	9.2	57.3	58.7	3.0	5.1	7.3	b_2 c_3	49 7.27	306 48 10.0 11.0	III 48.780	20 49 11.55	14 11 41.33	14 5882
204	9.3	38.8	40.9	43.0	45.2	47.2	c	51 43.02	306 50 10.0 10.8	III 43.700	20 51 47.29	14 11 18.21	14 5893
205	8.3	1.0	3.2	5.4	7.5	9.7	c	53 5.36	306 8 10.0 11.0	III 47.315	20 53 9.66	14 52 10.38	15 5848
206	9.1	25.5	27.7	29.7	31.8	34.0	c	53 29.74	306 32 10.0 11.0	V 46.900	20 53 34.02	14 28 18.46	14 5901
207	9.3	8.3	10.5	12.5	14.4	16.2	e	53 42.82	306 32 " "	V B 47.390	20 53 47.10	14 31 22.50	14 5902
208	9.1	34.5	36.6	38.8	40.9	43.0	c	54 38.76	306 8 10.0 11.2	V 48.800	20 54 43.05	14 51 42.76	15 5859
209	9.0	57.0	59.2	1.3	3.5	5.5	c	56 1.30	305 54 10.0 11.5	III 47.050	20 56 5.60	15 6 15.20	15 5864
210	9.2	58.3	0.4	2.4	4.5	6.7	c	57 2.46	306 30 10.0 11.6	III 43.080	20 57 6.72	—14 31 29.44	—14 5915
211	9.3	44.7	46.9	49.0	51.0	52.8	e	57 19.29	306 14 10.0 11.4	V 45.990	20 57 23.56	—14 46 35.71	—14 5917
212	9.3	28.7	31.0	33.0	34.9	36.7	e	58 3.36	306 54 10.0 11.3	V 46.260	20 58 7.60	14 6 28.57	14 5921
213	9.0	16.4	18.5	20.6	22.9	25.0	c	59 20.68	306 0 10.0 10.4	III A 48.590	20 59 24.95	14 56 29.81	15 5881
214	9.5	52.6	54.7	56.8	59.0	1.0	c	59 56.82	306 0 " "	V C 47.680	21 0 1.10	15 6 29.86	15 5883
215	8.9	59.2	1.1	3.0	4.8	7.2	a	1 32.68	306 40 10.0 12.0	I 49.490	21 1 36.92	—14 19 23.26	—14 5936

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
216	9.3	44.1	46.2	48.2	50.6	52.7	c	1 48.36	306 40 10.0 12.0	III C 53.330	21 1 52.60	−14 24 37.19	−14 5937
217	9.4	15.4	16.7	21.0	23.0	25.1	b_2 c_3	2 25.24	306 40 " "	III C 54.260	21 2 29.48	14 24 19.21	14 5939
218	9.0	1.8	4.0	6.0	8.0	9.8	e	2 36.34	306 16 10.0 11.2	V 49.370	21 2 40.59	14 43 29.71	14 5940
219	8.7	1.5	3.5	5.6	7.9	9.9	c	6 5.68	306 10 10.0 11.5	III 38.720	21 6 9.93	14 52 52.15	15 5908
220	9.0	25.9	28.0	30.1	32.3	34.5	c	6 30.16	306 10 " "	III C 42.580	21 6 34.42	−14 58 4.16	−15 5911
221	9.1	6.8	8.9	10.9	13.3	15.3	c	7 11.04	306 10 " "	III A 43.260	21 7 15.28	−14 48 9.41	−14 5960
222	9.1	3.9	6.1	8.2	10.5	12.6	c	8 8.26	305 58 10.0 10.4	III 42.730	21 8 12.52	15 3 35.89	15 5922
223	9.3	54.3	56.5	58.7	0.9	3.0	c	8 58.68	306 16 10.0 11.0	III 47.590	21 9 2.91	14 44 1.30	14 5974
224	9.1	50.2	52.4	54.5	56.7	58.8	c	9 54.52	306 16 " "	III B 42.200	21 9 58.75	14 48 57.83	15 5934
225	9.1	43.4	45.5	47.3	49.3	51.5	[illegible]	11 17.10	306 6 10.0 10.0	I 48.630	21 11 21.33	14 53 40.31	15 5940
226	9.6	......	22.8	24.7	26.6	28.8	a	11 54.38	306 36 10.0 12.1	I 42.900	21 11 58.59	14 25 27.70	14 5984
227	9.5	34.0	36.0	37.8	39.7	41.9	a	13 7.51	306 36 " "	I 41.980	21 13 11.72	14 25 45.11	14 5991
228	9.3	26.7	28.8	30.8	33.2	35.3	c	13 30.96	306 36 " "	III 43.390	21 13 35.17	14 25 19.50	14 5992
229	9.4	55.7	57.7	59.7	2.0	4.2	c	13 59.86	306 36 " "	V B 43.360	21 14 4.06	14 28 34.73	14 5996
230	8.0	40.3	42.3	44.4	46.3	48.1	e	14 14.74	306 36 " "	V (B) 50.200	21 14 18.94	−14 26 23.46	−14 5997
231	9.5	9.0	11.1	13.2	15.4	17.7	c	16 13.28	306 36 " "	III B 45.675	21 16 17.48	−14 27 48.38	−14 6003
232	9.3	38.4	40.5	42.7	44.9	47.0	c	16 42.70	307 8 10.0 11.5	V 49.830	21 16 46.86	13 51 15.45	14 6007
233	8.9	44.1	46.3	48.4	50.7	52.7	c	17 48.44	307 8 " "	III (B) 43.450	21 17 52.60	13 56 29.59	14 6010
234	9.5	29.5	31.5	33.7	35.3	37.7	a	19 3.20	306 18 10.0 11.5	I A 44.850	21 19 7.40	14 39 34.45	14 6016
235	9.3	21.0	23.0	25.3	27.4	29.4	c	19 25.22	306 18 " "	III C 50.270	21 19 29.41	14 47 33.63	14 6018
236	8.0	47.0	49.2	51.4	53.6	55.6	c	19 51.36	306 18 " "	III 45.960	21 19 55.56	−14 42 30.06	−14 6020

Reduction Elements. Zone 129.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 29.4....	−0.261	−0.228	−0.362	−0.207	−0.174	−0.330
29.5....	−0.153	−0.120	−0.298			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	51 Ophiuchi		ξ Serpentis		*o* Serpentis		μ Sagittarii		υ Capricorni		ε Aquarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	297 10 10.35		305 42 10.55		308 12 11.00		299 58 9.85		302 32 10.75		311 8 10.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.010	4 59.48	44.445	5 26.75	46.640	6 9.27		4 35.87		5 21.02	48.140	6 38.52
II Red. to Mer......	.040	0.24	.470	0.15	.685	0.13		0.21		0.18	.185	0.10
VI Inclination	.170		.560		.800		41.850	−1.68	44.200	−1.68	.350	
VII Refraction.......	.190	1 47.4	.620	1 16.9	.840	1 10.3	.890	1 36.0	.250	1 27.2	.390	1 3.8

	ν Aquarii		ζ Capricorni	
	° ′ ″		° ′ ″	
CIRCLE READING.	309 14 11.25		298 10 10.50	
	r	′ ″	r	′ ″
I Microm. Eq......		5 44.90		6 14.23
II Red. to Mer......		0.12		0.23
VI Inclination	45.460	−1.68	46.950	−1.68
VII Refraction.......	.480	1 8.2	47.050	1 43.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
51 Ophiuchi	17 25 12.74	11	−0.63	−8.08	297 13 22.7	26.6
ξ Serpentis	17 31 46.51	11	−0.60	−8.12	305 46 20.5	25.6
o Serpentis	17 35 42.83	11	−0.59	−8.16	308 17 10.1	26.2
δ Ursae Minoris....	18 6 24.52	2	−1.36	[−7.68]	47 40	....
μ Sagittarii	18 7 41.39	11	−0.62	−8.10	300 1 8.2	25.3
υ Capricorni	20 34 16.86	4	−0.61	−8.02	302 36 3.1	25.8
ε Aquarii	20 42 11.82	11	−0.58	−8.10	311 13 45.3	25.9
76 Draconis..........	20 50 23.80	5	−0.79	[−8.20]	43 12	....
ν Aquarii	21 4 4.66	11	−0.59	−7.93	309 18 46.4	25.0
ζ Capricorni	21 20 52.95	11	−0.63	−8.03	298 14 39.5	25.6

h 17.670	*dt*	s −8.115
	Hourly rate	+0.0292

Adopted Equator Point........ 321° 6′ 25.75″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 22	29.770	71.5	70.4
18 17	29.766	70.4	68.7
19 15	29.750	69.2	67.6
20 23	29.740	68.0	66.2
21 24	29.718	67.0	65.4

Notes.

8. Sky very slightly hazy.
20. Does not show double.
215. Fainter companion, s. f.

B, t, and T for 17h 22m computed from the Meteorological Journal.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			303°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	s
303	−0.609	17 0	+14.221	+14.116	+14.012	+13.909	......	......
304	0.605	17 30	14.115	14.009	13.904	13.800	+13.697	......
305	0.601	18 0	13.992	13.889	13.786	13.682	13.581	+13.478
306	0.597	18 30	+13.859	13.758	13.658	13.557	13.459	13.358
307	0.593	19 0	......	13.619	13.523	13.427	13.332	13.236
308	−0.590	19 30	......	+13.474	13.382	13.294	13.205	13.116
		20 0	......	......	13.242	13.160	13.080	12.997
		20 30	......	......	+13.100	13.028	12.955	12.882
		21 0	......	......	......	12.899	12.837	12.775
		21 30	......	......	......	+12.778	+12.726	+12.675

APPARENT RIGHT ASCENSION.	$D =$ Z. D. N. to 1895.0						R					
	303°	304°	305°	306°	307°	308°	302° 30′	303° 30′	304° 30′	305° 30′	306° 30′	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
17 0	+11.98	+11.70	+11.43	+11.16	.....	.....	86.86	83.62	80.56	77.62	74.85	72.19
17 30	9.88	9.64	9.39	9.15	+ 8.90	.....	87.02	83.77	80.70	77.77	74.99	72.33
18 0	7.53	7.31	7.10	6.89	6.68	+ 6.47	87.18	83.93	80.85	77.91	75.13	72.46
18 30	+ 4.97	4.79	4.62	4.44	4.27	4.10	87.30	84.04	80.97	78.02	75.23	72.56
19 0	.....	+ 2.10	− 1.97	+ 1.84	+ 1.71	+ 1.57	87.36	84.10	81.02	78.07	75.28	72.61
19 30	.....	− 0.69	− 0.79	− 0.87	− 0.97	− 1.05	87.44	84.18	81.10	78.14	75.35	72.68
20 0	.....	.....	3.62	3.66	3.71	3.75	87.52	84.26	81.17	78.22	75.42	72.74
20 30	.....	.....	− 6.45	6.46	6.47	6.47	87.60	84.33	81.25	78.29	75.49	72.81
21 0	.....	.....	.....	9.23	9.19	9.15	87.64	84.37	81.28	78.32	75.53	72.84
21 30	.....	.....	.....	−11.93	−11.84	−11.76	87.68	84.41	81.32	78.36	75.56	72.88

1895 JULY 31. ZONE 130. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.0	20.4	22.5	24.7	26.9	29.0	c	31 24.70	306 48 10.0 12.6	III	44.110	17 31 29.35	−14 14 13.66	−14 4699
2	8.9	40.6	......	44.8	47.0	49.1	c	32 44.84	306 24 10.0 11.7	III B	50.390	17 32 49.53	14 39 27.38	14 4710
3	9.1	39.6	41.7	43.8	46.0	48.1	c	35 43.84	306 42 10.0 12.3	III B	42.100	17 35 48.49	14 24 4.36	14 4726
4	9.0	13.8	16.0	18.0	20.3	22.2	c	36 18.06	306 42 " "	III A	39.780	17 36 22.70	14 18 20.04	14 4733
5	8.2	45.7	47.9	49.8	51.7	53.5	e	36 20.25	307 8 10.0 11.6	VII	46.790	17 36 24.85	13 53 22.66	13 4715
6	8.8	45.7	47.8	50.0	52.1	54.2	c	53 49.96	306 50 10.0 11.0	III	49.310	17 53 54.51	14 10 26.58	14 4839
7	8.4	30.5	32.6	34.6	36.8	38.9	c	54 34.68	306 50 " "	III	44.130	17 54 39.23	14 12 5.75	14 4845
8	9.0	44.4	46.5	48.6	50.8	53.0	c	0 48.66	306 16 10.0 11.6	III A	41.410	18 0 53.22	14 43 41.50	14 4885
9	9.1	50.7	52.8	54.9	57.1	59.3	c	3 54.96	306 16 " "	III (C)	41.170	18 3 59.52	14 53 26.54	14 4907
10	8.5	6.4	8.5	10.7	12.8	14.8	c	5 10.64	306 16 " "	III	47.460	18 5 15.19	−14 44 59.22	−14 4914
11	9.0	50.3	52.3	54.2	56.0	58.4	a	6 23.82	307 0 10.0 11.7	I	44.680	18 6 28.29	−14 1 48.72	−14 4928
12	9.0	38.9	41.0	43.2	45.3	47.3	c	10 43.14	306 52 10.0 10.5	III C	43.300	18 10 47.62	14 16 42.26	14 4962
13	9.3	1.2	3.5	......	7.8	10.0	c	12 5.62	306 52 " "	III A	43.650	18 12 10.08	14 6 53.54	14 4975
14	9.1	35.0	36.9	39.1	41.3	43.5	c	12 39.16	306 52 " "	III B	45.830	18 12 43.62	14 12 40.17	14 4984
15	9.1	7.0	9.1	11.1	13.1	14.9	e	12 41.55	306 52 " "	VII A	44.740	18 12 46.00	14 6 35.28	14 4985
16	9.1	27.3	29.5	31.6	33.8	36.0	c	14 31.64	305 54 10.0 10.0	III	48.980	18 14 36.17	15 6 28.48	15 4930
17	8.0	8.3	10.6	12.6	14.8	17.0	c	21 12.66	307 6 9.8 9.6	III	47.710	18 21 17.05	13 54 47.77	13 4981
18	9.1	26.9	29.0	31.0	33.2	35.5	c	25 31.12	307 8 10.0 10.3	III	48.960	18 25 35.48	13 52 21.74	13 5013
19	7.5	29.9	32.0	34.1	36.4	38.5	c	26 34.18	306 18 10.0 9.6	III	47.380	18 26 38.62	14 42 54.16	14 5098
20	9.0	20.0	22.0	24.2	26.3	28.5	c	27 24.20	307 2 10.0 9.9	III	46.580	18 27 28.56	−13 59 7.22	−14 5102
21	8.5	0.7	2.8	4.9	7.0	9.2	c	28 4.92	306 32 10.0 9.6	III	43.790	18 28 9.34	−14 30 1.93	−14 5110
22	7.8	41.7	43.8	45.7	47.4	49.8	a	30 15.28	306 54 10.0 11.0	I	41.350	18 30 19.65	14 8 44.86	14 5129
23	8.9	23.4	25.5	27.5	29.8	31.9	c	30 27.62	306 54 " "	III B	41.970	18 30 31.99	14 11 47.66	14 5131
24	6.5	15.5	17.7	19.7	21.9	24.0	c	32 19.76	306 54 " "	III A	41.680	18 32 24.12	14 5 23.93	14 5139
25	9.1	20.6	22.7	24.7	27.0	29.3	c	33 24.86	306 32 10.0 10.1	III	44.180	18 33 29.25	14 29 52.35	14 5143
26	9.1	28.3	30.4	32.5	34.7	36.9	c	34 32.56	306 8 10.0 10.5	III A	43.300	18 34 36.97	14 50 54.31	14 5149
27	9.0	8.2	10.2	12.5	14.6	16.7	c	35 12.44	306 8 " "	III C	48.750	18 35 16.86	14 58 51.04	15 5059
28	9.1	47.7	49.7	51.9	53.9	55.7	e	35 22.19	306 8 " "	V A	43.140	18 35 26.60	14 50 58.59	14 5153
29	9.2	56.3	58.5	0.8	2.8	4.8	c	37 0.64	306 32 10.0 10.8	III B	41.960	18 37 5.01	14 33 46.63	14 5161
30	9.3	14.9	17.0	19.0	21.3	23.3	c	37 19.10	306 32 " "	III B	43.630	18 37 23.47	−14 33 14.45	−14 5162

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
31	9.1	50.6	52.8	54.8	57.0	59.2	c	37 54.88	306 32 10.0 10.8	III B 46.680	18 37 59.25	—14 32 15.72	—14 5165
32	9.1	2.9	5.0	7.1	9.4	11.5	c	39 7.18	306 32 " "	III A 42.000	18 39 11.53	14 27 16.48	14 5172
33	9.0	26.0	27.9	29.9	31.6	34.0	a	40 59.59	306 4 10.0 10.4	I 46.025	18 41 3.98	14 57 13.86	14 5186
34	8.5	59.7	1.8	3.9	6.1	8.2	c	41 3.94	306 4 " "	III B 44.050	18 41 8.33	15 1 6.55	15 5091
35	9.1	26.1	28.3	30.4	32.2	34.0	e	42 0.71	307 0 10.0 11.0	VII (B) 44.820	18 42 5.01	14 4 51.63	14 5193
36	8.0	10.8	12.9	15.0	17.2	19.3	c	43 15.04	307 0 " "	III 46.820	18 43 19.33	14 0 56.64	14 5197
37	8.1	33.2	35.4	37.5	39.8	42.0	c	45 37.58	306 12 10.0 11.3	III 49.690	18 45 41.94	14 48 2.67	14 5210
38	8.0	32.0	34.0	36.2	38.5	40.5	c	47 36.24	306 36 10.0 11.1	III 43.240	18 47 40.55	14 26 4.84	14 5215
39	8.6	53.7	56.0	58.0	0.3	2.4	c	48 58.08	306 30 10.0 11.5	III A (46).120	18 49 2.39	14 27 53.81	14 5222
40	9.1	21.1	23.1	25.2	27.4	29.6	c	49 25.28	306 30 " "	V C 50.140	18 49 29.60	—14 36 19.20	—14 5224
41	7.8	58.7	0.7	2.9	5.0	7.3	c	51 2.92	306 52 10.0 11.6	III 45.150	18 51 7.19	—14 9 25.99	—14 5231
42	9.1	39.8	42.0	44.0	46.3	48.4	c	53 44.10	306 52 " "	III B 42.100	18 53 48.36	14 13 36.95	14 5246
43	9.0	15.5	17.6	19.6	21.8	24.0	c	56 19.70	307 12 10.0 11.1	III 46.620	18 56 23.91	13 48 55.48	13 5192
44	8.6	59.3	1.5	3.6	5.7	8.0	c	59 3.62	306 18 10.0 10.2	III 48.840	18 59 7.90	14 42 14.75	14 5279
45	7.7	6.0	8.0	10.1	12.3	14.5	c	0 10.18	306 18 " "	III C 50.340	19 0 14.46	14 48 11.75	14 5281
46	8.0	17.2	19.4	21.5	23.7	25.8	c	1 21.52	306 48 10.0 11.0	III 44.860	19 1 25.71	14 13 28.67	14 5287
47	8.9	53.6	55.7	57.8	59.8	2.1	c	2 57.80	306 22 10.0 11.3	III 49.700	19 3 2.05	14 37 56.22	14 5297
48	9.0	43.0	45.1	47.3	49.6	51.7	c	3 47.34	306 22 " "	III C 48.780	19 3 51.60	14 44 39.80	14 5307
49	7.5	25.3	27.5	29.6	31.7	34.0	c	5 29.62	306 48 10.0 11.4	III 47.790	19 5 33.82	14 12 30.87	14 5313
50	8.9	56.8	58.8	1.0	3.2	5.3	c	6 1.02	306 48 " "	III 50.190	19 6 5.22	—14 11 44.65	—14 5316
51	9.2	10.7	12.9	15.0	17.2	19.2	c	7 15.00	306 48 " "	III B 44.690	19 7 19.20	—14 16 43.05	—14 5330
52	6.8	12.2	14.4	16.4	18.7	20.7	c	8 16.48	306 48 " "	III 47.670	19 8 20.67	14 12 32.26	14 5339
53	9.1	44.0	46.3	48.5	50.6	52.8	c	9 48.44	306 56 10.0 10.1	III 44.550	19 9 52.61	14 5 31.95	14 5352
54	8.8	7.0	8.9	10.6	12.5	14.7	a	12 40.31	307 2 10.0 11.0	I 42.620	19 12 44.45	14 0 5.82	14 5377
55	8.8	40.1	42.3	44.5	46.7	48.8	c	12 44.48	306 34 10.0 10.9	III B 41.910	19 12 48.67	14 31 35.45	14 5378
56	8.9	32.1	34.0	36.0	37.9	40.2	a	14 5.68	306 34 " "	I 46.080	19 14 9.86	14 27 0.22	14 5389
57	8.5	46.3	48.4	50.5	52.8	55.0	c	14 50.60	307 6 10.0 10.6	III 44.000	19 14 54.72	13 55 40.17	14 5397
58	9.4	42.3	43.7	48.1	50.1	52.4	$b_2 c_3$	15 52.33	306 4 10.0 10.6	III 43.860	19 15 56.54	14 57 45.27	15 5324
59	8.0	36.5	38.5	40.6	42.9	45.0	c	16 40.70	307 6 10.0 10.7	III 45.200	19 16 44.82	13 55 16.53	14 5407
60	......	9.4	11.4	15.6	17.2	19.8	$c_4 d_3$	17 7.10	306 0 10.0 10.9	VI 43.860	19 17 11.31	—15 1 46.82	—15 5331
61	9.0	39.9	42.3	44.2	46.1	48.0	e	17 14.47	306 0 " "	VII B 39.710	19 17 18.68	—15 6 20.67	—15 5333
62	9.1	55.7	58.0	0.2	2.3	4.5	c	24 0.14	307 0 10.0 10.0	III B 40.020	19 24 4.24	14 6 7.48	14 5445
63	9.4	38.4	40.6	42.7	45.0	47.0	c	24 42.74	307 0 " "	III A 38.350	19 24 46.83	14 0 10.65	14 5448
64	8.3	38.2	40.4	42.5	44.7	46.7	c	25 42.50	306 50 10.0 10.5	III 45.100	19 25 46.60	14 11 16.36	14 5452
65	8.8	43.5	45.6	47.7	50.0	52.0	c	26 47.76	306 30 10.0 10.6	III 42.200	19 26 51.89	14 32 12.50	14 5457
66	8.7	31.1	33.3	35.5	37.7	39.7	c	27 35.46	307 2 10.0 11.4	III 42.070	19 27 39.54	14 0 12.95	14 5461
67	8.8	5.6	7.7	9.8	12.1	14.1	c	28 9.86	306 48 10.0 11.3	V 47.295	19 28 13.95	14 12 34.49	14 5464
68	7.	54.1	56.0	58.0	59.9	2.2	a	31 27.70	306 22 10.0 11.0	I 45.115	19 31 31.81	14 39 13.73	14 5475
69	9.6	35.8	37.4	41.9	44.0	46.0	$b_2 c_3$	31 46.02	306 22 " "	III B 47.560	19 31 50.13	14 41 41.52	14 5476
70	......	15.2	17.5	19.4	21.3	23.0	e	31 49.71	306 22 " "	V (50).610	19 31 53.81	—14 37 31.06	—14 5478
71	8.0	30.0	32.2	34.3	36.3	38.5	c	33 34.26	306 32 10.0 11.5	V 45.530	19 33 38.34	—14 29 7.31	—14 5493
72	9.5	25.2	27.3	29.5	31.9	34.0	c	35 29.58	306 10 10.0 11.0	III A 42.340	19 35 33.68	14 48 52.47	14 5505
73	8.7	6.2	8.4	10.4	12.4	14.3	e	35 40.73	306 10 " "	V B 42.140	19 35 44.84	14 55 26.43	15 5432
74	8.9	23.5	25.6	27.8	30.0	32.2	c	38 27.82	306 16 10.0 11.5	III 45.350	19 38 31.90	14 45 8.64	14 5525
75	9.2	12.0	14.3	16.1	18.3	20.6	c	39 16.26	306 16 " "	V C 49.420	19 39 20.35	14 50 17.64	14 5531
76	9.2	48.8	50.8	53.0	55.4	57.4	c	39 53.08	306 16 " "	V A 43.970	19 39 57.15	14 42 20.84	14 5534
77	8.9	56.0	58.3	0.4	2.6	4.9	c	41 0.44	305 54 10.0 11.0	III 44.180	19 41 4.54	15 7 31.59	15 5462
78	8.6	14.7	16.8	18.9	21.0	23.1	c	42 18.90	306 10 10.0 11.3	III A 42.400	19 42 22.97	14 48 49.12	14 5552
79	8.5	27.7	29.9	32.0	34.0	36.3	c	43 31.98	306 10 " "	III 47.020	19 43 36.05	14 50 35.47	14 5561
80	8.6	46.9	49.1	51.2	53.3	55.6	c	44 51.22	306 40 10.0 10.4	III 43.300	19 44 55.24	—14 21 45.56	—14 5567
81	8.2	56.9	59.0	1.0	3.2	5.4	c	48 1.10	306 36 10.0 11.5	III 42.600	19 48 5.11	—14 25 57.70	—14 5581
82	8.0	11.7	13.7	15.9	18.1	20.2	c	49 15.92	307 12 10.0 11.0	III 46.420	19 49 19.86	13 48 41.69	13 5512
83	9.0	48.4	50.6	52.7	55.0	57.1	c	49 52.76	307 12 " "	III 43.830	19 49 56.70	13 49 32.22	13 5518
84	8.6	32.2	34.2	36.4	38.7	40.8	c	52 36.46	306 26 10.0 10.8	III 44.840	19 52 40.46	14 35 14.21	14 5601
85	9.1	55.2	57.3	59.1	1.0	3.4	a	55 28.91	306 4 10.0 10.5	I 44.340	19 55 32.92	14 57 22.61	15 5531
86	7.9	33.2	35.4	37.4	39.7	41.7	c	55 37.48	306 4 " "	III B 42.935	19 55 41.49	15 1 4.32	15 5534
87	9.3	11.5	13.7	15.7	17.9	20.2	c	0 15.80	306 46 10.0 11.6	III 45.860	20 0 19.73	14 14 51.17	14 5636
88	8.0	0.3	2.6	4.6	6.9	9.0	c	8 4.68	306 30 10.0 11.0	III 48.970	20 8 8.59	14 29 50.32	14 5674
89	8.0	52.0	54.1	56.2	58.5	0.6	c	8 56.28	306 30 " "	III C 42.910	20 9 0.20	14 38 12.54	14 5680
90	8.9	41.0	43.2	45.3	47.4	49.5	c	9 45.28	306 30 " "	III B 45.070	20 9 49.19	—14 34 17.98	—14 5684
91	9.1	57.3	59.5	1.5	3.7	5.7	c	10 1.54	306 30 " "	V C 47.735	20 10 5.45	—14 36 40.83	—14 5690
92	8.9	19.2	21.5	23.3	25.6	27.9	c	10. 23.50	306 30 " "	V B 41.300	20 10 27.41	14 35 31.71	14 5693
93	8.8	6.6	8.7	10.9	13.0	15.1	c	11 10.86	306 30 " "	V 47.635	20 11 14.75	14 30 16.45	14 5697
94	8.5	3.0	5.2	7.3	9.5	11.6	c	14 7.32	307 14 10.0 10.0	III 48.460	20 14 11.15	13 45 56.99	13 5637
95	8.4	1.2	3.3	5.4	7.6	9.8	c	15 5.46	307 2 10.0 10.5	III 46.265	20 15 9.30	13 58 39.14	14 5718
96	8.3	31.5	33.7	35.9	38.1	40.3	c	15 35.90	306 12 10.0 11.1	III A 40.795	20 15 39.80	14 47 10.57	14 5720
97	8.7	51.2	53.4	55.5	57.7	59.9	c	16 55.54	306 12 " "	III C 45.180	20 16 59.44	14 55 27.62	15 5640
98	8.0	56.6	58.8	0.9	3.0	5.1	c	20 0.88	307 12 10.0 10.5	III B 40.510	20 20 4.69	13 53 41.09	14 5738
99	7.5	34.5	36.8	39.0	41.0	43.2	c	20 38.90	307 12 " "	III B 43.840	20 20 42.71	13 52 37.04	14 5742
100	8.6	31.6	33.7	35.8	38.0	40.0	c	21 35.82	307 12 " "	III B 44.670	20 21 39.62	—13 52 20.84	—14 5745
101	9.0	4.4	6.5	8.5	10.3	12.1	e	21 38.90	307 12 " "	V 46.210	20 21 42.70	—13 48 39.37	—13 5672
102	8.7	34.0	36.3	38.2	40.5	42.6	c	22 38.32	306 52 10.0 11.0	III 47.760	20 22 42.14	14 8 8.67	14 5754
103	8.7	10.6	12.8	15.0	17.0	19.2	c	26 14.92	307 0 10.0 10.9	III C 47.040	20 26 18.71	14 6 47.41	14 5766
104	8.7	3.9	6.0	8.3	10.4	12.5	c	27 8.22	307 0 " "	III B 49.420	20 27 12.00	14 2 48.62	14 5775
105	6.	29.5	31.6	33.7	36.0	38.0	c	28 33.76	307 0 " "	III B 45.980	20 28 37.54	—14 3 54.28	—14 5781

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
106	9.1	33.3	35.5	37.6	39.8	41.8	c	29 37.60	307 0	10.0	10.9	III	50.250	20 29 41.37	−13 59 18.79	−14 5788
107	9.1	8.9	11.3	13.1	15.1	17.0	e	29 43.60	307 0	"	"	V A	48.900	20 29 47.36	13 56 30.79	14 5790
108	8.4	32.3	34.5	36.6	38.9	41.0	c	35 36.66	307 10	10.0	11.0	III	43.920	20 35 40.39	13 51 18.28	14 5815
109	7.8	51.7	53.8	55.8	58.1	0.2	c	38 55.92	306 28	10.0	11.0	III	45.540	20 38 59.69	14 32 48.30	14 5839
110	9.0	55.2	57.1	1.4	3.0	5.7	$c_4 d_3$	43 52.93	306 38	10.0	10.1	VI	46.740	20 43 56.67	−14 22 26.01	−14 5859
111	9.1	9.2	11.3	13.4	15.6	17.9	c	50 13.48	307 12	10.0	10.5	III	46.710	20 50 17.14	−13 48 21.41	−13 5793
112	9.2	55.3	57.3	59.0	0.8	3.0	a	52 28.66	307 0	10.0	10.8	I	45.070	20 52 32.32	14 0 51.25	14 5895
113	8.0	56.4	58.4	0.5	2.7	4.8	c	53 0.56	307 16	10.0	9.6	III	44.510	20 53 4.21	13 45 3.27	13 5807
114	8.2	35.9	38.0	40.1	42.4	44.5	c	54 40.18	307 10	10.0	10.0	III B	47.630	20 54 43.83	13 53 16.36	14 5907
115	7.5	29.7	32.0	33.9	36.1	38.2	c	55 33.98	307 10	"	"	III B	41.360	20 55 37.63	13 55 16.48	14 5908
116	9.1	3.0	5.4	7.5	9.6	11.7	c	56 7.44	307 10	"	"	III B	45.450	20 56 11.08	13 53 57.85	14 5911
117	9.1	27.7	29.9	31.9	34.3	36.5	c	59 32.06	306 28	10.0	10.1	III	45.990	20 59 35.73	14 32 35.36	14 5925
118	8.5	59.7	1.8	4.0	6.2	8.3	c	1 4.00	307 6	10.0	10.0	III	46.790	21 1 7.62	13 54 17.97	14 5932
119	9.0	0.9	2.9	5.0	7.2	9.3	c	2 5.06	307 16	10.0	10.1	III	50.950	21 2 8.67	13 42 57.67	13 5853
120	9.0	10.8	13.0	15.2	17.3	19.4	c	3 15.14	307 16	"	"	III	48.230	21 3 18.74	−13 43 49.37	−13 5860
121	7.8	56.2	58.4	0.5	2.7	4.8	c	4 0.52	306 34	10.0	10.1	III B	41.110	21 4 4.16	−14 31 21.05	−14 5946
122	9.3	32.9	35.2	37.2	39.2	41.0	e	4 7.56	306 34	"	"	VII A	41.230	21 4 11.19	14 24 52.94	14 5948
123	8.6	24.5	26.5	28.6	31.0	33.0	c	5 28.72	306 34	"	"	III	41.180	21 5 32.35	14 28 6.13	14 5951
124	9.0	19.5	21.6	23.7	26.0	28.0	c	6 23.76	306 34	"	"	III	43.510	21 6 27.38	14 27 21.23	14 5956
125	9.2	37.9	40.0	42.2	44.3	46.5	c	7 42.18	306 44	10.0	10.4	III	45.510	21 7 45.79	14 16 41.97	14 5964
126	9.3	59.8	1.8	3.9	6.3	8.4	c	9 4.04	306 44	"	"	III A	41.720	21 9 7.64	14 14 39.05	14 5975
127	9.2	56.3	58.3	0.1	1.8	4.3	a	10 29.72	307 6	10.0	9.9	I A	41.370	21 10 33.29	13 52 43.01	14 5977
128	9.0	34.0	35.5	39.6	41.8	44.0	$b_2 c_3$	10 43.97	307 6	"	"	III B	42.620	21 10 47.55	13 58 49.31	14 5978
129	......	27.0	29.0	31.0	32.7	35.0	a	12 0.49	307 14	10.0	10.0	I (B)	44.420	21 12 4.05	13 50 12.40	14 5987
130	8.9	14.2	16.2	18.0	19.9	......	a	12 47.64	307 14	"	"	I A	41.720	21 12 51.20	−13 44 35.42	−13 5900
131	9.1	29.4	31.5	33.3	35.3	37.5	a	13 2.96	307 14	"	"	III C	46.790	21 13 6.52	−13 52 41.30	−14 5990
132	7.8	3.3	5.3	7.2	9.0	11.4	a	14 36.80	307 6	10.0	9.9	I	42.820	21 14 40.36	−13 55 29.90	−14 5999

Reduction Elements. Zone 130.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 31.4....	−0.213	−0.180	−0.511	−0.202	−0.168	−0.471
31.5....	−0.190	−0.157	−0.431			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ξ Ophiuchi		51 Ophiuchi		Mayer 703		2 H. Scuti		υ Capricorni		ε Aquarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	300 2 10.10		297 10 10.80		302 16 10.90		306 24 10.05		302 32 9.65		311 10 10.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......		5 42.88	43.040	4 59.79	41.750	4 35.52		5 31.25	44.170	5 21.69	41.970	4 40.17
II Red. to Mer......		0.21	.045	0.24	.810	0.19	44.655	0.13	.225	0.18	42.040	0.10
VI Inclination	45.390	−1.68	.195		.920		.830	−0.67	.360		.155	
VII Refraction	.340	1 36.6	.190	1 48.8	.930	1 28.8	.790	1 16.3	.285	1 28.6	.215	1 4.8

	19 Capricorni		16 Aquarii	
	° ′ ″		° ′ ″	
CIRCLE READING.	302 42 9.75		316 0 9.95	
	r	′ ″	r	′ ″
I Microm. Eq......	48.050	6 36.60	49.295	6 59.88
II Red. to Mer......	.110	0.18	.315	0.05
VI Inclination	.240		.455	
VII Refraction	.265	1 28.0	.460	54.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ξ Ophiuchi	17 14 55.10	11	−0.74	− 8.35	300 6 14.9	26.2
51 Ophiuchi	17 25 13.14	11	−0.76	− 8.36	297 13 22.0	25.8
Mayer 703	17 49 56.96	11	−0.73	− 8.32	302 19 17.8	25.9
δ Ursae Minoris......	18 6 22.14	5	+0.56	[− 7.83]	47 40	....
2 H. Scuti	18 23 25.46	11	−0.70	− 8.44	306 28 24.5	26.0
λ Ursae Minoris.....	19 28 26.67	3	+2.87	[−10.19]	50 2	....
υ Capricorni........	20 34 17.34	11	0.73	− 8.36	302 36 2.9	25.6
ε Aquarii	20 42 12.35	11	−0.68	− 8.50	311 13 45.7	26.2
19 Capricorni	20 49 4.94	11	−0.73	− 8.47	302 47 18.5	25.6
16 Aquarii	21 15 46.70	11	−0.65	− 8.54	316 6 15.2	25.2

h 17.722............*dt* .... s −8.368

Hourly rate .... −0.0321

Adopted Equator Point.........321° 6′ 25.81″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 15	29.824	67.1	65.2
18 15	29.822	64.9	62.8
19 20	29.818	62.4	62.4
20 18	29.815	62.5	59.9
21 17	29.800	61.4	58.8

Note.
During the middle of this zone star images very bad and magnitudes difficult to estimate.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			D = Z. D. N. to 1895.0			R		
			306°	307°	308°	306°	307°	308°	306°	307°	307° 30′
°	s	h m	s	s	s	″	″	″	″	″	″
306	—0.706	17 30	+13.804	+13.703	+13.598	+ 9.02	+ 8.77	+ 8.51	77.36	74.59	73.25
307	0.700	18 0	13.683	13.581	13.479	6.77	6.55	6.34	77.55	74.78	73.44
308	—0.694	18 30	13.554	13.454	13.356	4.32	4.13	3.95	77.66	74.89	73.54
		19 0	13.418	13.324	13.228	+ 1.69	+ 1.55	+ 1.40	77.70	74.92	73.57
		19 30	13.280	13.190	13.101	— 1.03	— 1.14	— 1.23	77.79	75.01	73.66
		20 0	13.141	13.059	12.977	3.83	3.88	3.94	77.96	75.18	73.82
		20 30	13.003	12.929	12.858	6.63	6.64	6.66	78.11	75.32	73.96
		21 0	12.868	12.805	12.745	9.42	9.40	9.37	78.16	75.37	74.01
		21 30	+12.741	+12.690	+12.639	—12.12	—12.06	—11.99	78.22	75.42	74.06

1895 AUGUST 2. ZONE 131. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		[illegible]	s	s	[illegible]	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.7	49.0	51.2	53.1	55.1	56.8	[illegible]	54 23.27	304 58 10.0 10.4	VII 46.040	17 54 27.12	—16 3 36.63	—16 4678
2	9.0	46.8	48.9	51.0	53.2	55.4	c	55 51.06	304 36 10.0 11.0	III 43.485	17 55 54.94	16 26 23.39	16 4687
3	8.9	16.3	18.4	20.3	22.7	24.8	c	56 20.50	304 48 10.0 11.5	V 46.550	17 56 24.35	16 13 24.94	16 4690
4	8.3	4.1	6.2	8.2	10.0	12.5	a	2 38.12	304 36 10.0 10.0	I 45.090	18 2 41.97	16 25 49.14	16 4720
5	9.2	34.5	36.7	38.8	41.0	43.1	c	2 38.82	304 36 " "	III B 41.595	18 2 42.68	16 30 11.05	16 4721
6	9.0	9.8	12.1	14.1	16.3	18.4	c	3 14.14	304 36 " "	III 47.465	18 3 17.98	16 25 4.91	16 4724
7	9.3	6.7	8.8	11.0	13.2	15.1	c	4 10.96	305 46 10.0 10.9	III 44.030	18 4 14.69	15 16 6.90	15 4843
8	8.5	17.0	19.3	21.4	23.4	25.7	c	5 21.36	305 4 10.0 10.8	III A 44.025	18 5 25.14	15 54 53.12	15 4849
9	8.6	15.0	17.1	18.9	20.9	23.0	a	6 48.84	305 4 " "	I B 42.290	18 6 52.63	16 1 52.80	16 4753
10	8.3	52.9	55.1	57.2	59.5	1.6	c	6 57.26	304 26 10.0 10.8	V 44.660	18 7 1.10	—16 35 58.84	—16 4754
11	9.2	55.9	58.2	0.3	2.5	4.7	c	8 0.32	305 12 10.0 11.0	V 44.075	18 8 4.08	—15 50 7.50	—15 4878
12	9.3	6.8	8.3	12.4	14.8	16.8	b_2 c_3	9 16.86	305 0 10.0 10.5	III B 41.050	18 9 20.64	16 6 17.81	16 4766
13	......	19.7	21.8	26.1	27.7	30.3	c_4 d_3	9 17.51	305 0 " "	VI B 50.060	18 9 21.29	16 3 27.12	16 4767
14	9.4	59.2	1.2	3.4	5.4	7.0	e	9 33.48	305 0 " "	VII 53.390	18 9 37.25	15 59 10.11	15 4893
15	9.4	51.6	53.7	55.5	57.4	59.6	a	11 25.38	305 22 10.0 11.1	I C 47.850	18 11 29.12	15 45 16.82	15 4908
16	9.1	24.4	26.6	28.8	31.1	33.3	c	11 28.84	305 22 " "	III 46.200	18 11 32.58	15 39 23.66	15 4910
17	9.2	54.6	56.7	58.6	0.3	2.7	a	13 28.32	305 48 10.0 11.0	I 48.430	18 13 32.00	15 12 37.57	15 4922
18	9.2	45.9	48.1	50.3	54.5	56.0	c_3 d_2	13 45.92	304 56 10.0 10.6	V A 43.480	18 13 49.68	16 3 2.60	16 4811
19	9.3	15.7	17.8	......	21.5	23.6	e	13 49.90	304 56 " "	VII A(41).230	18 13 53.66	16 3 47.09	16 4812
20	9.5	8.5	10.7	12.6	14.8	17.0	c	15 12.72	304 56 " "	III A 41.390	18 15 16.47	—16 3 40.69	—16 4826
21	9.4	46.6	48.8	50.9	52.9	54.6	e	15 20.99	304 56 " "	V A 43.550	18 15 24.74	—16 3 0.69	—16 4828
22	9.0	32.3	34.6	36.6	40.7	42.5	c_3 d_2	16 32.29	304 56 " "	V 40.750	18 16 36.04	16 7 9.24	16 4840
23	......	13.8	16.1	18.0	19.8	21.7	e	16 48.09	304 56 " "	VII C 47.470	18 16 51.85	16 11 27.15	16 4846
24	8.6	24.0	26.0	28.2	30.4	32.6	c	19 28.24	305 50 10.0 10.9	III 48.420	18 19 31.89	15 10 37.17	15 4962
25	8.6	46.2	48.3	50.4	52.6	54.8	c	19 50.46	305 50 " "	V 42.670	18 19 54.12	15 12 28.70	15 4965
26	9.4	56.0	58.0	0.3	2.4	4.6	c	25 0.26	305 0 10.0 10.5	III A 40.560	18 25 3.97	15 59 53.13	16 4906
27	8.9	37.8	39.9	42.1	44.2	46.4	c	25 42.08	305 0 " "	III 41.660	18 25 45.79	16 2 47.15	16 4910
28	9.0	33.9	36.0	38.3	40.5	42.7	c	26 38.28	305 0 " "	III A 39.430	18 26 41.99	16 0 14.22	16 4919
29	8.5	29.0	31.1	33.2	35.7	37.7	c	27 33.34	305 0 " "	III B 38.230	18 27 37.05	16 7 5.59	16 4928
30	......	55.6	57.6	59.9	2.0	4.1	c	28 59.84	304 48 10.0 11.8	III A 38.260	18 29 3.55	—16 12 35.77	—16 4936
31	9.4	23.2	25.3	27.5	29.7	31.9	c	29 27.52	304 48 " "	V B 42.620	18 29 31.24	16 17 42.14	—16 4939
32	8.5	56.9	59.0	1.0	3.0	4.9	e	29 31.17	304 48 " "	VII 47.160	18 29 34.88	16 13 2.65	16 4941
33	8.9	56.1	57.8	2.0	4.1	6.3	b_2 c_3	31 6.31	304 42 10.0 12.0	III B 46.550	18 31 10.03	16 22 24.80	16 4955
34	8.9	14.9	17.1	19.4	21.6	23.7	c	31 19.34	304 42 " "	V 41.190	18 31 23.06	16 20 55.63	16 4956
35	8.3	42.7	44.8	47.0	49.2	51.3	c	32 47.00	304 42 " "	III B 42.210	18 32 50.71	16 23 47.51	16 4963
36	9.2	41.1	43.2	45.3	47.5	49.7	c	34 45.36	305 26 10.0 11.4	III 47.110	18 34 48.99	15 34 57.81	15 5056
37	9.1	17.7	19.9	22.0	24.1	26.4	c	36 22.02	305 14 10.0 10.6	III A 41.920	18 36 25.66	15 45 22.40	15 5062
38	9.3	51.6	53.6	55.8	58.1	0.3	c	36 55.88	305 14 " "	III C 47.980	18 36 59.52	15 53 7.49	15 5068
39	9.4	32.0	34.3	36.3	38.4	40.6	c	37 36.32	305 14 " "	III 42.030	18 37 39.96	15 48 35.26	15 5071
40	9.2	56.7	58.8	1.0	3.2	5.3	c	39 1.00	304 54 10.0 11.5	III (B) 44.620	18 39 4.66	—16 10 58.81	—16 5007
41	9.6	23.5	25.6	27.9	30.1	32.3	c	40 27.88	304 54 " "	III B 48.790	18 40 31.54	—16 9 38.30	—16 5021
42	8.5	7.8	10.0	11.8	13.6	16.0	a	41 41.71	304 54 " "	I A 41.910	18 41 45.35	16 5 19.55	16 5028
43	9.6	45.0	47.3	49.5	51.7	53.9	c	41 49.48	304 54 " "	III C 43.580	18 41 53.14	16 14 30.73	16 5029
44	8.6	22.5	24.7	26.9	29.0	31.2	c	45 26.86	304 46 10.0 10.3	III 42.010	18 45 30.50	16 16 34.45	16 5048
45	9.3	27.0	29.1	31.2	33.5	35.5	c	46 31.26	305 32 10.0 10.7	III B 46.320	18 46 34.84	15 32 22.43	15 5129
46	8.4	4.4	6.4	8.6	10.9	13.0	c	47 8.66	305 32 " "	III A 42.980	18 47 12.22	15 26 57.57	15 5132
47	8.6	22.1	24.2	26.2	28.5	30.7	c	47 26.34	305 32 " "	V B 44.420	18 47 29.91	15 33 0.04	15 5133
48	9.4	38.2	40.3	42.3	44.6	46.9	c	56 42.46	305 6 10.8 11.0	VII C 44.420	18 56 46.03	16 2 11.07	16 5122
49	9.4	8.8	11.0	12.7	14.8	16.9	a	56 42.68	305 6 " "	I 49.740	18 56 46.24	15 53 59.12	15 5192
50	8.7	45.7	47.9	50.1	52.0	53.7	e	58 20.19	305 32 10.0 11.0	V 44.530	18 58 23.71	—15 29 40.67	—15 5211
51	8.5	52.6	54.7	57.0	59.2	1.3	c	0 56.96	305 24 10.0 11.0	III 44.320	19 1 0.46	—15 37 33.25	—15 5231
52	9.7	43.4	45.3	47.1	49.0	51.1	a	3 16.94	305 40 10.0 12.0	I 48.060	19 3 20.42	—15 20 27.58	—15 5248

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
53	8.8	3.7	6.0	8.2	10.4	12.6	c	3 8.18	304 38 10.0 10.7	V 48.065	19 3 11.75	−16 22 33.89	−16 5169
54	9.3	27.2	29.4	31.5	33.9	36.0	c	4 31.60	304 38 “ “	III B 42.100	19 4 35.17	16 27 39.86	16 5183
55	9.2	6.6	8.7	10.5	12.4	14.6	a	5 40.48	304 38 “ “	I B 48.210	19 5 44.04	16 25 40.48	16 5190
56	8.9	53.7	55.9	57.7	59.6	1.9	a	6 27.69	304 38 “ “	I B 41.830	19 6 31.25	16 27 42.67	16 5198
57	9.2	26.4	28.6	30.8	33.0	35.1	c	6 30.78	305 48 10.0 11.4	V C 45.770	19 6 34.24	15 19 39.26	15 5269
58	8.4	5.1	7.3	9.3	11.7	13.7	c	7 9.42	305 48 “ “	V A 42.230	19 7 12.86	15 11 5.77	15 5274
59	8.0	34.0	36.1	38.3	40.5	42.7	c	9 38.32	304 46 10.0 11.3	III 42.430	19 9 41.85	16 16 17.89	16 5220
60	9.0	51.0	53.1	55.2	57.4	59.5	c	10 55.24	304 24 10.0 11.1	III 46.720	19 10 58.80	−16 36 56.29	−16 5240
61	8.5	48.0	50.2	52.4	54.6	56.9	c	11 52.42	304 58 10.0 11.4	III (C) 48.600	19 11 55.93	−16 8 44.33	−16 5253
62	.....	20.3	22.4	26.6	28.2	......	$c_4\ d_2$	12 18.05	304 58 “ “	V C 50.760	19 12 21.56	16 8 3.89	16 5256
63	9.0	56.1	58.3	0.4	2.4	4.2	e	12 30.52	304 58 “ “	VII 53.570	19 12 34.01	16 0 45.04	16 5260
64	7.5	24.5	26.6	30.8	32.6	35.1	$c_4\ d_3$	13 22.30	304 58 “ “	VI B 48.980	19 13 25.80	16 5 25.89	16 5272
65	9.0	52.7	55.0	57.2	59.4	1.6	c	15 57.18	305 16 10.0 11.5	III 45.240	19 16 0.64	15 45 20.46	15 5325
66	9.1	10.9	13.0	15.1	17.4	19.5	c	17 15.18	305 16 “ “	III 42.020	19 17 18.64	15 46 21.84	15 5332
67	9.2	25.2	27.4	29.5	31.7	33.6	c	17 29.48	305 16 “ “	V B 45.760	19 17 32.94	15 48 24.78	15 5334
68	9.3	23.4	25.6	27.8	30.0	32.0	c	19 27.76	305 0 10.0 11.0	III B 39.720	19 19 31.23	16 6 19.54	16 5303
69	9.1	17.8	19.7	21.7	23.6	26.1	a	20 51.65	305 0 “ “	I B 41.470	19 20 55.11	16 5 43.78	16 5310
70	9.1	53.8	55.9	57.8	59.5	2.0	a	21 27.65	305 0 “ “	I A 43.530	19 21 31.09	−15 58 35.42	−16 5314
71	.....	33.7	35.9	37.8	40.3	42.4	(c)	21 38.02	305 30 10.0 11.0	III 47.080	19 21 41.43	−15 30 42.94	−15 5357
72	8.7	57.7	0.0	2.2	4.3	8.5	$c_2\ d_1$	22 59.96	304 42 10.0 11.0	V 43.280	19 23 3.43	16 19 59.02	16 5324
73	9.2	25.1	27.4	29.6	31.7	33.9	c	24 29.54	304 42 “ “	III B 48.365	19 24 33.01	16 21 32.91	16 5335
74	7.7	55.4	57.5	59.7	1.8	4.0	c	24 59.68	304 42 “ “	III B 45.340	19 25 3.14	16 22 30.81	16 5337
75	9.3	35.0	37.1	39.2	41.6	43.4	c	26 39.26	305 50 10.0 10.6	III (A) 43.870	19 26 42.61	15 8 26.90	15 5380
76	8.0	26.9	29.2	31.3	33.6	35.6	c	27 31.32	305 50 “ “	III B 49.180	19 27 34.68	15 13 13.38	15 5386
77	9.2	12.1	14.4	16.5	18.8	21.0	c	28 16.56	305 50 “ “	V C 50.400	19 28 19.92	15 16 3.78	15 5392
78	8.8	31.0	33.1	35.2	37.6	39.7	c	28 35.32	305 50 “ “	V (C) 45.690	19 28 38.68	15 17 34.07	15 5397
79	8.9	12.1	14.3	16.4	18.7	20.9	c	31 16.48	306 0 10.0 10.4	V C 46.710	19 31 19.81	15 7 13.31	15 5407
80	8.9	0.7	3.0	5.0	7.4	9.4	c	32 5.10	306 0 “ “	III A 40.850	19 32 8.42	−14 59 22.79	−15 5410
81	.....	48.2	50.5	52.4	54.4	56.3	e	32 22.64	305 22 10.0 11.0	VII C 48.380	19 32 26.02	−15 44 43.35	−15 5412
82	7.5	6.4	8.5	10.6	12.8	15.0	c	34 10.66	305 56 10.0 10.7	III 46.920	19 34 13.97	15 4 41.11	15 5421
83	9.0	45.8	47.9	50.1	52.4	54.5	c	34 50.14	305 14 10.0 11.0	V 47.060	19 34 53.50	15 46 41.32	15 5428
84	8.7	21.7	23.8	25.9	28.1	30.2	c	37 25.94	305 34 10.0 10.4	V A 43.570	19 37 29.27	15 24 31.67	15 5441
85	9.1	34.4	36.5	......	40.9	43.0	c	38 38.70	305 44 10.0 11.0	III (A) 44.160	19 38 42.01	15 14 17.73	15 5448
86	8.5	25.0	27.2	29.4	31.6	33.7	c	39 29.38	305 44 “ “	III B 43.250	19 39 32.69	15 21 3.58	15 5455
87	8.8	56.4	58.5	0.7	3.0	5.0	c	41 0.72	305 44 “ “	III 43.760	19 41 4.02	15 17 40.07	15 5463
88	9.3	39.7	42.0	44.2	46.4	48.5	c	41 44.16	305 44 “ “	III A 42.975	19 41 47.45	15 14 39.52	15 5466
89	8.9	9.7	12.0	14.2	16.3	18.4	c	43 14.12	305 44 “ “	III B 46.300	19 43 17.41	15 20 3.94	15 5472
90	8.6	26.5	28.7	30.8	33.0	35.0	c	45 30.80	305 36 10.0 10.9	III 45.530	19 45 34.09	−15 25 5.18	−15 5481
91	9.4	28.5	30.7	33.0	35.1	37.3	c	48 32.92	305 28 10.0 11.0	III 43.290	19 48 36.21	−15 33 47.59	−15 5501
92	9.4	29.9	32.0	34.2	36.5	38.5	c	51 34.22	305 28 “ “	III 47.110	19 51 37.49	15 32 33.39	15 5512
93	8.4	22.8	25.0	27.2	29.3	31.5	c	52 27.16	305 46 10.0 11.3	III 46.610	19 52 30.40	15 14 41.76	15 5518
94	9.3	19.7	21.8	24.0	26.2	28.3	c	53 24.00	305 46 “ “	III 42.180	19 53 27.24	15 16 6.50	15 5523
95	7.5	12.2	14.1	16.1	17.9	20.2	a	54 45.98	304 52 10.0 11.6	I 43.830	19 54 49.27	16 9 35.29	16 5478
96	9.1	47.3	49.6	51.5	53.9	56.2	c	54 51.70	304 52 “ “	III 44.620	19 54 54.99	16 9 21.63	16 5479
97	9.0	39.6	41.7	43.5	45.4	47.7	a	57 13.36	305 38 10.0 10.4	I C 50.200	19 57 16.60	15 27 57.13	15 5539
98	9.3	37.6	39.7	41.5	43.6	45.8	a	58 11.42	305 38 “ “	I B 42.220	19 58 14.66	15 27 16.72	15 5542
99	9.2	8.9	11.0	13.3	15.6	17.5	c	58 13.26	305 38 “ “	III A 44.520	19 58 16.49	15 20 5.68	15 5543
100	9.1	52.7	54.8	57.0	59.3	1.3	c	58 57.02	305 42 10.0 11.4	III A 42.010	19 59 0.24	−15 16 52.95	−15 5549
101	9.0	40.7	42.8	44.8	47.1	49.1	c	59 44.90	305 42 “ “	III B 45.460	19 59 48.12	−15 22 15.16	−15 5552
102	8.8	2.9	5.0	9.1	10.9	13.5	$c_4\ d_3$	0 0.68	305 22 10.0 11.1	VI B 44.900	20 0 3.92	15 42 29.13	15 5554
103	9.1	39.9	42.1	44.3	46.6	48.5	c	1 44.28	305 26 10.0 11.1	III A 41.350	20 1 47.51	15 33 5.72	15 5559
104	8.7	2.8	5.1	7.1	9.3	11.5	c	3 7.16	305 26 “ “	III C 43.120	20 3 10.38	15 42 12.94	15 5565
105	9.6	39.1	41.7	43.8	46.1	48.4	c	5 43.82	304 52 10.0 10.4	III 43.540	20 5 47.07	16 9 39.95	16 5525
106	9.3	55.0	57.1	59.3	1.7	3.8	c	6 59.38	305 30 9.2 9.4	III A 39.430	20 7 2.58	15 29 42.17	15 5579
107	9.1	30.3	32.3	34.5	36.4	38.2	e	7 4.64	305 30 “ “	VII B 47.150	20 7 7.84	15 33 45.53	15 5580
108	8.7	25.5	27.6	29.7	32.0	34.0	c	8 29.76	304 40 10.0 10.7	V A 42.440	20 8 33.01	16 18 46.84	16 5535
109	9.1	18.7	20.8	22.9	25.2	27.3	c	9 22.98	304 40 “ “	V (B) 40.920	20 9 26.23	16 25 44.48	16 5540
110	7.7	14.9	16.8	19.0	21.4	23.3	c	10 19.08	304 28 10.0 11.2	III B 46.250	20 10 22.34	−16 36 0.73	−16 5545
111	9.1	40.9	43.2	45.3	47.5	49.6	c	10 45.30	304 28 “ “	V C 47.020	20 10 48.56	−16 38 59.92	−16 5546
112	9.3	35.5	37.7	39.8	42.1	44.2	c	11 39.86	304 28 “ “	V A 44.720	20 11 43.10	16 30 2.56	16 5548
113	9.0	10.3	12.7	14.9	17.1	19.2	c	12 14.84	304 28 “ “	V 42.240	20 12 18.09	16 34 5.23	16 5554
114	9.1	7.6	9.8	11.8	13.8	15.6	e	12 41.90	304 38 10.0 11.3	V 45.420	20 12 45.13	16 23 3.53	16 5557
115	9.3	21.6	23.8	25.8	28.0	30.2	c	14 25.88	305 40 10.0 11.7	V B 45.980	20 14 29.03	15 24 2.63	15 5621
116	9.4	40.1	42.3	44.7	46.7	48.9	c	15 44.54	305 40 “ “	III 50.180	20 15 47.68	15 19 26.86	15 5632
117	8.6	25.7	27.9	30.0	31.8	33.8	e	15 59.99	304 24 10.0 11.0	V 49.560	20 16 3.22	16 35 44.04	16 5570
118	9.4	18.5	20.0	24.0	26.3	28.4	$b_2\ c_3$	17 28.47	305 26 10.0 10.1	III 47.970	20 17 31.62	15 34 10.27	15 5641
119	8.0	55.9	58.1	0.1	2.1	3.8	e	17 30.22	304 54 10.0 11.0	VII 46.810	20 17 33.40	16 6 36.07	16 5587
120	9.0	49.3	51.4	53.6	55.4	57.3	e	18 23.74	305 40 10.0 11.1	VII A 43.440	20 18 26.87	−15 18 23.27	−15 5649
121	7.5	50.7	52.9	54.8	56.5	58.8	a	20 24.50	305 40 “ “	I A 43.240	20 20 27.62	−15 18 22.04	−15 5663
122	9.1	33.3	35.4	37.7	39.9	42.0	c	20 37.66	305 40 “ “	III B 42.730	20 20 40.78	15 25 2.14	15 5665
123	9.2	29.5	31.7	34.0	36.1	38.2	c	21 33.90	305 40 “ “	III B 50.440	20 21 37.02	15 22 33.94	15 5672
124	9.4	9.5	11.6	13.8	15.9	18.0	c	22 13.76	305 40 “ “	III C 47.530	20 22 16.88	15 26 42.50	15 5675
125	9.3	18.7	20.5	22.8	25.0	27.1	c	23 22.82	305 40 “ “	III B 47.410	20 23 25.93	15 23 31.60	15 5683
126	8.0	31.3	33.2	35.2	37.0	39.2	a	25 5.05	304 54 10.0 10.9	I 47.150	20 25 8.19	16 6 23.63	16 5617
127	7.0	20.7	23.0	25.0	27.3	29.3	c	25 25.06	305 40 10.0 11.7	III B 47.640	20 25 28.16	−15 23 26.39	−15 5696

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
128	9.2	58.2	0.6	2.7	4.8	7.0	c	26 2.66	305 40 10.0 11.7	III 47.620	20 26 5.75	−15 20 13.33	−15 5698
129	9.3	47.7	49.8	51.7	53.6	55.8	a	27 21.49	305 40 " "	I B 42.560	20 27 24.58	15 25 1.62	15 5706
130	9.2	37.7	39.9	42.0	44.2	46.3	c	27 42.02	305 2 10.0 11.1	III A 43.200	20 27 45.14	−15 56 24.44	−16 5634
131	9.2	33.6	35.8	38.0	40.1	42.3	c	28 37.96	305 2 " "	III B 45.390	20 28 41.08	−16 2 10.87	−16 5635
132	8.8	4.7	6.9	9.1	11.4	13.7	c	29 9.16	304 52 10.0 11.0	V 47.230	20 29 12.29	16 8 23.97	16 5638
133	9.0	34.6	36.7	38.9	41.0	43.2	c	30 38.88	305 28 10.0 10.4	III C 45.580	20 30 41.96	15 39 18.71	15 5725
134	7.8	37.4	39.6	41.7	43.8	46.1	c	31 41.72	305 28 " "	III A 45.570	20 31 44.80	15 29 37.07	15 5732
135	9.4	11.8	14.1	16.1	18.4	20.6	c	33 16.20	305 28 " "	III C 48.700	20 33 19.28	15 38 18.19	15 5738
136	8.6	14.7	16.8	18.7	20.5	22.7	a	34 48.50	305 18 10.0 10.7	I 41.710	20 34 51.58	15 44 4.57	15 5750
137	9.4	54.1	56.2	58.4	0.5	2.7	c	34 58.38	305 18 " "	III B 44.390	20 35 1.46	15 46 27.92	15 5752
138	8.7	27.0	29.3	31.3	33.2	34.9	e	35 1.42	305 18 " "	V B 46.860	20 35 4.50	15 45 42.03	15 5753
139	9.0	54.8	57.1	59.2	1.5	3.6	c	36 59.24	305 2 10.0 10.5	III B 46.700	20 37 2.32	16 1 43.97	16 5672
140	9.1	20.2	22.5	24.5	26.7	29.0	c	37 24.58	305 2 " "	III 45.740	20 37 27.65	−15 58 49.00	−16 5676
141	8.8	51.1	53.3	55.5	57.6	59.8	c	37 55.46	305 28 10.0 10.1	V 45.830	20 37 58.51	−15 32 47.45	−15 5767
142	9.1	29.5	31.6	33.7	35.9	38.1	c	39 33.76	304 36 10.0 10.4	III 48.630	20 39 36.85	16 23 54.35	16 5689
143	8.7	44.0	46.0	48.2	50.4	52.5	c	41 48.22	305 2 10.0 10.5	III 45.410	20 41 51.27	15 58 54.27	16 5695
144	9.2	58.6	0.8	3.0	5.2	7.4	c	42 3.00	305 2 " "	V C 50.020	20 42 6.06	16 3 53.10	16 5697
145	9.0	46.3	48.4	50.5	52.6	54.8	c	42 50.52	305 50 10.0 10.6	V C 48.070	20 42 53.53	15 16 28.00	15 5796
146	9.2	27.0	29.1	31.2	33.4	35.6	c	43 31.26	305 50 " "	III C 48.985	20 43 34.26	15 16 9.11	15 5801
147	9.1	56.2	58.4	0.3	......	......	c	45 0.46	305 50 " "	III 46.870	20 45 3.46	15 10 23.17	15 5809
148	9.1	......	......	......	......	......	......	......	304 46 10.0 10.5	III 46.000	20 47 26	16 14 42.46	16 5719
149	9.1	......	......	......	......	......	......	......	305 0 10.0 10.0	III C (49).150	20 53 21	16 6 6.43	16 5753
150	9.2	......	......	......	......	......	......	......	305 0 " "	V 45.230	20 53 22	−16 0 56.80	−16 5754
151	9.1	......	......	......	......	......	......	......	305 30 10.0 10.2	III 47.330	20 54 40	−15 30 13.30	−15 5858
152	9.4	......	......	......	......	......	......	......	305 12 10.0 10.0	III 46.470	20 56 53	15 48 30.28	15 5867
153	7.7	......	......	......	......	......	......	......	305 12 " "	V B 45.870	20 57 0	15 51 56.59	16 5769
154	9.0	......	......	......	......	......	......	......	305 26 10.0 10.1	III 50.010	20 57 57	15 33 21.37	15 5874
155	9.1	......	......	......	......	......	......	......	304 56 10.0 10.5	III C 45.550	20 58 47	16 11 14.27	16 5779
156	8.9	......	......	......	......	......	......	......	304 56 " "	V A 44.440	20 58 58	16 1 55.46	16 5780
157	9.1	......	......	......	......	......	......	......	304 58 10.0 11.1	III A 49.060	21 1 15	15 58 24.40	16 5792
158	8.0	......	......	......	......	......	......	......	304 58 " "	III C 47.260	21 1 39	16 8 40.45	16 5798
159	8.0	......	......	......	......	......	......	......	304 58 " "	III 49.350	21 2 25	16 1 33.95	16 5800
160	9.5	......	......	......	......	......	......	......	305 6 10.0 11.0	VII 47.640	21 5 38	−15 54 8.26	−16 5814
161	9.0	......	......	......	......	......	......	......	304 44 10.0 11.3	III 49.420	21 7 8	−16 15 32.24	−16 5821
162	9.4	......	......	......	......	......	......	......	305 24 10.0 11.0	III C 43.120	21 8 15	15 43 57.58	15 5923
163	8.9	......	......	......	......	......	......	......	305 24 " "	I A 48.770	21 9 38	15 32 25.32	15 5929
164	6.0	......	......	......	......	......	......	......	305 24 " "	III 50.300	21 10 13	15 35 12.90	15 5935
165	9.1	......	......	......	......	......	......	......	305 30 10.0 10.8	V 45.100	21 11 17	15 30 53.64	15 5939
166	9.4	......	......	......	......	......	......	......	305 10 10.0 11.0	III 47.850	21 14 16	15 49 59.81	16 5843
167	8.7	......	......	......	......	......	......	......	305 28 10.0 10.6	I B 49.000	21 15 58	15 34 48.29	15 5958
168	9.1	......	......	......	......	......	......	......	305 28 " "	I (50).490	21 16 25	15 31 6.52	15 5959
169	9.1	......	......	......	......	......	......	......	305 28 " "	V B 48.360	21 16 30	15 35 3.74	15 5960
170	9.7	......	......	......	......	......	......	......	305 16 10.0 11.0	VII 46.640	21 17 24	−15 44 24.62	−15 5967
171	9.3	......	......	......	......	......	......	......	305 16 " "	III 46.390	21 18 37	−15 44 26.69	−15 5977
172	9.0	......	......	......	......	......	......	......	305 24 10.0 11.2	III 48.820	21 24 27	−15 35 39.49	−15 5995

Reduction Elements. Zone 131.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
August 2.4....	−0.235	−0.193	−0.335	−0.230	−0.170	−0.335
2.5....	−0.226	−0.146				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ο Serpentis		Mayer 703		ν Ophiuchi		2 H. Scuti		19 Capricorni		ν Aquarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	308 12 11.00		302 16 10.80		311 16 10.30		306 24 10.75		302 42 10.00		309 14 10.55	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.655	6 9.81	41.705	4 34.90	44.880	5 35.13	44.580	5 29.21	48.055	6 36.44	45.410	5 45.81
II Red. to Mer......	.690	0.13	.750	0.19	.895	0.10	.565	0.15	.105	0.18	.480	0.12
VI Inclination	.840		.900		45.020		.725		.225		.590	
VII Refraction.......	.890	1 10.5	.925	1 27.9	.050	1 3.3	.740	1 15.5	.245	1 27.0	.590	1 8.6

	ζ Capricorni		β Aquarii		γ Capricorni		λ Capricorni		Mayer 909		Mayer 911	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	298 10 10.20		315 0 10.80		303 54 10.05		309 10 11.20		299 22 10.30		302 38 10.45	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.920	6 14.98	44.285	5 22.50	45.170	5 41.60	48.050	6 36.31	43.425	5 8.12	44.675	5 32.00
II Red. to Mer	.990	0.23	.320	0.06	.220	0.17	.070	0.12	.510	0.22	.740	0.18
VI Inclination	47.120			1.68	.375		.250		.625		.860	
VII Refraction.	.125	1 44.3		56.0	.425	1 23.3	.235	1 8.8	.650	1 39.4	.915	1 27.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
o Serpentis	17 35 44.02	10	−0.61	−9.33	308 17 10.4	26.3
Mayer 703	17 49 57.86	11	−0.64	−9.31	302 19 18.0	26.1
ν Ophiuchi	17 53 28.00	11	−0.60	−9.34	311 20 42.2	25.7
2 H. Scuti	18 23 26.29	11	−0.62	−9.34	306 28 24.6	26.0
51 H. Cephei S. P	18 51 23.34	6	+1.22	[−9.31]	53 50	....
19 Capricorni	.. ..	..	....	....	302 47 19.6	26.5
ν Aquarii	.. ..	..	....	....	309 18 47.9	26.3
ζ Capricorni	.. ..	..	....	....	298 14 41.1	27.2
β Aquarii	.. ..	..	....	....	315 4 39.0	26.4
γ Capricorni	21 34 30.20	11	−0.63	−9.34	303 58 28.5	27.0
λ Capricorni	21 41 6.55	11	−0.61	−9.27	309 15 38.8	26.2
Mayer 909	21 53 6.25	11	−0.65	−9.28	299 25 39.2	26.4
Mayer 911	21 56 38.75	11	−0.64	−9.24	302 42 15.2	27.0

h 17.928 . . . . *dt* . . . . s −9.330

Hourly rate . . . . +0.0125

Adopted Equator Point . . . . 321° 6′ 26.42″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 45	29.822	71.2	68.9
18 42	29.818	69.9	67.2
19 43	29.820	68.7	66.2
20 40	29.812	67.5	65.2
21 44	29.808	66.8	64.3

Notes.

61, 62. Double, observed s. p.

133. Double, mean observed.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0				*D* = Z. D. N. to 1895.0				*R*		
			304°	305°	306°	307°	304°	305°	306°	307°	304°	305°	306°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
304	−0.630	17 30	+14.015	+13.910	+13.806	......	+ 9.51	+ 9.24	+ 8.98	....	82.49	79.47	76.61
305	0.626	18 0	13.886	13.783	13.680	......	7.18	6.95	6.72	....	82.64	79.62	76.75
306	−0.623	18 30	13.747	13.645	13.545	......	4.63	4.44	4.24	....	82.79	79.76	76.90
		19 0	13.597	13.501	13.405	......	+ 1.92	+ 1.77	+ 1.61	....	82.89	79.86	76.98
		19 30	13.442	13.350	13.262	+13.174	− 0.90	− 1.01	− 1.13	−1.24	82.97	79.93	77.06
		20 0	13.280	13.198	13.117	+13.036	3.78	3.86	3.93	−4.00	83.06	80.02	77.14
		20 30	13.117	13.045	12.973	......	6.72	6.74	6.77	....	83.14	80.09	77.22
		21 0	12.958	12.895	12.833	......	9.59	9.58	9.57	....	83.21	80.17	77.29
		21 30	+12.802	+12.751	+12.700	......	−12.41	−12.35	−12.29	....	83.27	80.22	77.34

1895 AUGUST 8. ZONE 132. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		*α* 1900.0	*δ* 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.1	22.2	24.1	26.2	27.9	30.2	a	2 56.29	303 2 10.0 11.5	I	47.080	18 2 58.95	−17 59 11.39	−17 5034
2	9.2	41.2	43.4	45.1	47.0	49.4	(a)	4 15.26	303 52 10.0 10.5	I (B)	43.935	18 4 17.83	17 13 22.49	17 5044
3	9.3	48.5	50.7	52.9	55.0	57.2	c	4 52.86	303 52 " "	III	45.840	18 4 55.42	17 9 34.19	17 5051
4	8.9	19.9	22.0	23.8	25.8	28.0	a	4 53.93	303 52 " "	I	45.270	18 4 56.49	17 9 43.58	17 5052
5	9.4	37.2	39.0	43.0	45.3	47.4	b_2 c_3	5 47.40	305 36 10.0 10.5	III	42.090	18 5 49.79	15 26 41.23	15 4852
6	9.0	20.4	22.7	24.7	26.6	28.5	e	5 54.81	304 56 10.0 11.3	V	44.220	18 5 57.26	16 6 2.96	16 4746
7	8.0	4.3	6.5	8.4	10.2	12.2	e	6 38.50	304 42 10.0 11.2	V B	41.300	18 6 40.98	16 24 12.90	16 4752
8	9.4	25.1	27.4	29.5	31.4	33.2	e	6 59.51	304 42 " "	VII	47.035	18 7 1.98	16 19 10.38	16 4755
9	7.5	37.5	39.5	41.3	43.2	45.6	a	9 11.19	305 36 10.0 10.2	I	47.730	18 9 13.56	15 24 50.41	15 4889
10	9.5	36.0	38.1	39.9	42.0	44.2	a	10 9.90	305 0 10.0 11.0	I	43.650	18 10 12.32	−16 2 9.49	−16 4778
11	9.0	29.5	31.6	33.5	35.3	37.7	a	11 3.44	304 42 10.7 11.8	I C	46.210	18 11 5.90	−16 25 46.45	−16 4787
12	9.1	6.2	8.3	10.3	12.0	14.4	a	11 40.13	304 42 " "	I A	44.500	18 11 42.57	16 16 37.16	16 4792
13	9.4	35.9	38.2	40.2	42.4	44.5	c	11 40.24	304 42 " "	III	43.400	18 11 42.69	16 20 15.36	16 4793
14	9.0	22.5	24.5	26.3	28.2	30.5	a	12 56.30	304 42 " "	I	41.655	18 12 58.74	16 20 46.87	16 4803
15	8.9	10.9	13.0	15.1	17.3	19.4	c	13 15.14	304 42 " "	III	42.725	18 13 17.58	16 20 27.76	16 4806
16	9.0	41.1	43.5	45.4	47.4	49.2	e	13 15.50	304 42 " "	VII C	49.120	18 13 17.95	16 24 53.34	16 4807
17	9.1	55.3	57.4	59.6	1.8	3.9	c	14 59.60	304 56 10.0 11.2	III	49.730	18 15 2.00	16 4 12.73	16 4822
18	8.9	45.8	47.9	50.0	52.4	54.5	c	15 50.12	303 4 10.0 11.5	V	48.870	18 15 52.70	17 56 35.32	17 5154
19	9.3	36.9	39.0	41.2	43.5	45.7	c	17 41.26	303 46 10.3 11.8	III	48.100	18 17 43.76	17 14 45.81	17 5176
20	9.3	37.7	40.0	42.0	44.3	46.5	c	18 42.10	303 4 10.0 11.2	III	43.950	18 18 44.67	−17 58 7.56	−17 5183

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
21	7.5	28.7	30.8	33.0	35.3	37.4	c	20 33.04	302 54 10.0 10.8	III 42.510	18 20 35.62	−18 8 35.23	−18 4962
22	7.5	54.6	56.7	58.7	1.0	3.0	c	21 58.80	304 32 9.5 10.2	III 46.420	18 22 1.20	16 29 15.63	16 4884
23	8.0	39.6	41.5	43.5	45.4	47.6	a	23 13.45	304 32 " "	I 48.000	18 23 15.84	16 28 43.38	16 4893
24	8.9	56.7	58.9	1.0	3.4	5.5	c	23 1.10	305 24 10.0 11.2	V 46.280	18 23 3.41	15 37 16.26	15 4979
25	8.7	57.2	59.5	1.6	3.5	5.3	e	23 31.76	305 40 9.0 10.4	VII 47.840	18 23 34.04	15 20 47.52	15 4982
26	9.0	51.9	53.5	57.7	59.9	2.0	$b_2 c_3$	31 2.06	304 14 10.0 10.5	III 45.025	18 31 4.43	16 47 38.71	16 4953
27	8.8	23.9	25.8	27.7	29.5	31.9	a	31 57.54	305 32 10.0 11.2	III 41.570	18 31 59.79	15 30 41.85	15 5033
28	9.3	12.8	14.9	17.0	19.2	21.4	c	35 17.06	304 30 10.0 10.8	III C 45.140	18 35 19.39	16 38 3.36	16 4981
29	8.0	2.2	4.4	6.5	8.7	10.8	c	36 6.52	304 30 " "	III A 43.320	18 36 8.84	16 28 54.45	16 4987
30	9.0	14.0	16.4	18.5	20.7	22.9	c	37 18.50	304 30 " "	III B 50.450	18 37 20.81	−16 33 5.89	−16 4995
31	8.6	15.5	17.6	19.7	21.8	23.9	c	40 19.70	305 26 9.3 10.0	III 47.370	18 40 21.91	−15 34 48.92	−15 5086
32	8.9	59.8	1.9	4.0	6.3	8.3	c	43 4.06	304 40 10.0 10.2	III 45.950	18 43 6.33	16 21 16.87	16 5040
33	8.7	2.0	4.4	6.6	10.9	12.5	$c_3 d_2$	46 2.22	304 24 10.0 10.2	V 44.660	18 46 4.48	16 37 42.68	16 5051
34	9.5	10.2	12.2	14.0	15.9	18.2	a	48 43.93	305 16 10.0 10.7	I C 46.650	18 48 46.12	15 51 24.45	15 5140
35	......	52.7	54.8	57.0	59.1	1.3	c	48 56.98	305 16 " "	III A 40.650	18 48 59.15	15 43 39.35	15 5143
36	7.8	24.0	26.2	28.4	30.6	32.7	c	49 28.38	305 16 " "	III C 43.380	18 49 30.57	15 52 28.32	15 5149
37	9.3	42.4	44.5	46.6	48.8	50.8	c	51 46.62	305 16 " "	III B 43.475	18 51 48.79	15 49 12.83	15 5157
38	8.0	45.0	47.0	48.9	50.9	53.1	a	53 18.83	305 8 10.0 10.5	I C 45.610	18 53 21.00	15 59 43.34	16 5103
39	8.9	39.1	41.1	43.0	44.9	47.3	a	54 12.91	305 8 " "	I A 44.890	18 54 15.06	15 50 14.97	15 5168
40	9.0	12.7	15.0	17.0	19.3	21.4	c	54 17.08	305 8 " "	III 46.400	18 54 19.24	−15 53 3.05	−15 5169
41	9.0	30.3	32.5	34.6	36.7	39.0	c	56 34.62	305 18 10.0 10.6	III A 42.230	18 56 36.75	−15 41 6.44	−15 5190
42	9.3	49.3	51.4	53.4	55.8	58.0	c	56 53.58	305 18 " "	V B 38.320	18 56 55.72	15 48 51.56	15 5195
43	9.2	24.3	26.3	28.4	30.8	32.8	c	57 28.52	305 18 " "	V C 46.290	18 57 30.66	15 49 30.94	15 5201
44	9.4	......	20.7	22.7	27.1	28.7	$c_4 d_2$	58 18.50	305 18 " "	V B 48.850	18 58 20.63	15 45 29.02	15 5210
45	......	51.0	53.2	55.4	57.5	59.6	c	59 55.34	305 18 " "	III C 48.880	18 59 57.45	15 48 39.26	15 5223
46	9.4	13.9	16.2	18.4	20.5	22.5	c	0 18.30	305 18 " "	III C 49.640	19 0 20.41	15 48 24.54	15 5225
47	8.3	23.5	25.8	27.8	30.0	32.3	c	1 27.88	305 0 10.0 10.4	III B 46.220	19 1 30.00	16 4 17.83	16 5157
48	8.6	38.5	40.6	42.8	45.0	47.1	c	2 42.80	305 0 " "	III 42.820	19 2 44.92	16 2 9.39	16 5165
49	8.8	27.5	29.8	31.9	34.2	36.4	c	3 31.96	305 0 " "	III A 39.720	19 3 34.06	15 59 53.22	16 5171
50	9.3	46.9	49.1	51.3	53.6	55.6	c	3 51.30	305 0 " "	V 38.830	19 3 53.40	−16 3 26.94	−16 5175
51	8.9	20.0	22.0	24.2	26.4	28.4	c	4 24.20	305 12 10.0 10.1	V 45.790	19 4 26.29	−15 49 12.80	−15 5253
52	7.0	14.9	17.0	19.0	21.4	23.5	c	5 19.16	304 54 10.0 10.5	V A 42.560	19 5 21.26	16 4 59.86	16 5187
53	9.2	43.4	45.7	47.7	51.9	53.6	$c_3 d_2$	5 43.41	304 54 " "	V C 47.220	19 5 45.52	16 13 11.52	16 5191
54	9.1	16.6	18.6	20.8	23.0	25.1	c	6 20.82	304 54 " "	V A 41.560	19 6 22.92	16 5 18.75	16 5194
55	8.3	23.6	25.6	27.4	29.3	31.6	a	7 57.38	304 54 " "	I B 47.925	19 7 59.48	16 9 41.46	16 5208
56	7.8	40.0	42.2	43.9	45.9	48.3	a	8 13.95	304 54 " "	III C 49.080	19 8 16.04	16 12 33.87	16 5210
57	8.0	12.5	14.5	16.7	18.9	21.0	c	8 16.72	304 54 " "	V A 44.770	19 8 18.80	16 4 16.50	16 5211
58	9.3	11.2	13.2	15.4	17.5	19.7	c	9 15.40	304 54 " "	V B 50.440	19 9 17.48	16 8 56.09	16 5215^1
59	9.3	41.3	43.5	45.6	47.5	49.2	e	9 15.64	304 54 " "	VII B 50.190	19 9 17.72	16 9 2.21	16 5215^2
60	8.0	20.8	23.0	25.1	27.3	29.5	c	11 25.14	304 46 10.0 10.0	III 50.300	19 11 27.22	−16 13 43.86	−16 5247
61	7.7	33.3	35.5	37.7	40.0	42.0	c	11 37.70	304 46 " "	V 46.320	19 11 39.78	−16 15 1.53	−16 5249
62	8.0	44.1	46.3	48.5	50.7	52.8	c	12 48.48	303 38 10.0 10.0	III 44.130	19 12 50.66	17 23 45.05	17 5573
63	......	11.7	13.9	16.0	18.2	20.3	c	13 16.02	305 16 10.0 10.0	V A 43.640	19 13 18.05	15 42 35.86	15 5310
64	9.3	55.9	57.8	59.9	2.0	4.1	c	13 59.94	305 16 " "	III B 41.890	19 14 1.99	15 49 36.35	15 5314
65	9.4	41.0	43.1	45.3	47.5	49.6	c	14 45.30	304 42 10.0 10.4	V 45.370	19 14 47.37	16 19 18.73	16 5278
66	9.0	30.5	32.7	34.8	37.0	39.0	c	17 34.80	305 32 10.0 10.3	III 46.340	19 17 36.77	15 28 55.69	15 5335
67	7.5	5.9	8.0	10.0	12.3	14.4	c	19 10.12	305 46 10.2 11.0	III A 41.510	19 19 12.06	15 13 11.35	15 5341
68	6.5	23.5	25.6	27.7	30.0	32.0	c	20 27.76	305 46 " "	III 45.800	19 20 29.70	15 15 4.09	15 5348
69	......	6.2	8.3	10.7	12.9	14.9	c	21 10.60	304 34 10.0 10.6	V B 46.320	19 21 12.64	16 30 12.25	16 5311
70	9.3	27.7	30.0	32.0	36.2	37.9	$c_3 d_2$	21 27.70	304 34 " "	V C 49.010	19 21 29.74	−16 32 33.06	−16 5313
71	8.9	1.2	3.4	5.5	7.4	9.3	e	21 35.54	304 34 " "	VII 50.370	19 21 37.57	−16 25 42.05	−16 5316
72	9.0	22.2	24.5	26.5	28.8	30.9	c	22 26.58	304 34 " "	V 52.980	19 22 28.60	16 24 50.58	16 5320
73	7.0	45.6	47.8	49.9	52.1	54.4	c	23 49.96	305 34 10.2 11.0	III C 44.670	19 23 51.91	15 33 51.39	15 5366
74	9.1	13.7	15.9	18.0	20.2	22.2	c	24 18.00	305 34 " "	III 49.140	19 24 19.93	15 25 59.33	15 5367
75	9.1	50.6	52.8	54.8	56.8	58.6	e	24 25.03	305 34 " "	VII B 44.030	19 24 26.97	15 30 53.49	15 5368
76	8.0	37.2	39.2	41.4	43.6	45.8	c	26 41.44	305 4 10.0 10.2	III 43.510	19 26 43.41	15 57 48.48	16 5344
77	8.5	1.5	3.7	5.8	8.0	10.1	c	28 5.82	305 4 " "	III C 49.320	19 28 7.78	16 2 22.69	16 5356
78	9.5	32.8	34.7	37.0	39.0	43.5	$c_2 d_1$	28 34.82	305 4 " "	III C 48.050	19 28 36.78	16 2 46.94	16 5361
79	9.0	10.4	12.4	14.2	16.0	18.5	a	30 44.15	305 4 " "	I B 49.740	19 30 46.09	15 58 59.20	16 5371
80	9.1	44.0	46.0	47.9	49.9	52.0	a	31 17.91	304 26 10.0 10.1	III (C) 49.810	19 31 19.89	−16 40 14.14	−16 5377
81	9.0	22.5	24.6	26.6	28.9	31.0	c	31 26.72	304 26 " "	V 44.590	19 31 28.70	−16 35 29.44	−16 5379
82	9.1	50.0	52.2	54.2	56.5	58.5	c	31 54.28	304 26 " "	V C 48.910	19 31 56.26	16 40 32.38	16 5381
83	......	11.9	13.9	18.1	19.8	22.5	$c_4 d_3$	34 9.65	305 38 10.0 10.0	VI 43.580	19 34 11.52	15 23 45.37	15 5420
84	9.0	52.5	54.8	56.7	58.8	0.5	e	34 26.97	305 28 10.0 9.6	VII A 44.430	19 34 28.84	15 30 15.13	15 5424
85	8.8	16.5	18.6	20.8	25.0	26.5	$c_3 d_2$	35 16.45	305 28 " "	VI (C) 50.080	19 35 18.33	15 38 6.84	15 5431
86	8.7	30.8	32.9	35.0	37.3	39.4	c	36 35.08	305 48 10.0 11.3	V 48.160	19 36 36.92	15 12 15.06	15 5436
87	9.0	33.2	35.4	37.5	39.4	41.1	e	37 7.62	305 24 10.0 10.9	V 51.230	19 37 9.49	15 35 17.25	15 5438
88	5.	51.5	53.7	57.9	59.6	2.3	$c_4 d_3$	37 49.40	305 24 " "	VI C 50.120	19 37 51.27	15 42 4.83	15 5444
89	9.0	45.6	47.7	49.7	52.0	54.2	c	42 49.84	304 54 9.2 9.7	III A 42.550	19 42 51.72	16 4 47.76	16 5441
90	9.0	19.0	21.3	23.3	25.5	27.6	c	43 23.34	304 54 " "	III (C) 44.630	19 43 25.22	−16 13 49.24	−16 5442

Reduction Elements. Zone 132.

1895.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
August 8. 3....	−0. 303	−0. 230		−0. 275	−0. 222	−0. 406
8. 5....	−0. 247	−0. 214	−0. 406			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ξ Serpentis		Mayer 703		Bradley 2329		Bradley 2333		30 Sagittarii		Piazzi XVIII. 260	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	305 42 10. 20		302 16 10. 50		309 58 10. 80		297 28 10. 30		298 46 10. 20		305 36 9. 45	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44. 410	5 26. 31	41. 550	4 32. 12	45. 300	5 43. 27		4 14. 87	42. 730	4 54. 67	45. 090	5 38. 29
II Red. to Mer......	. 405	0. 15	. 590	0. 19	. 330	0. 11		0. 23	. 790	0. 22	. 160	0. 15
VI Inclination	. 585		. 780		. 440		40. 760	−1. 68	. 920			1. 68
VII Refraction.......	. 605	1 15. 9	. 780	1 26. 4	. 470	1 5. 2	. 790	1 44. 9	. 965	1 39. 4		1 16. 4

	υ Sagittarii		51 Aquilae	
	° ′ ″		° ′ ″	
CIRCLE READING.	304 54 10. 35		310 0 10. 00	
	r	′ ″	r	′ ″
I Microm. Eq......		4 28. 42	44. 920	5 36. 85
II Red. to Mer......		0. 16	. 980	0. 11
VI Inclination	41. 490	−1. 68	45. 130	
VII Refraction.......	. 475	1 18. 5	. 170	1 5. 4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ξ Serpentis	17 31 49. 03	11	−0. 76	−10. 55	305 46 20. 8	25. 6
Mayer 703	17 49 59. 16	11	−0. 78	−10. 51	302 19 16. 4	24. 6
Bradley 2329......	18 29 27. 06	11	−0. 74	−10. 62	310 2 49. 0	24. 0
Bradley 2333	18 32 22. 77	7	−0. 80	−10. 64	297 30 38. 8	23. 8
30 Sagittarii	18 44 46. 97	11	−0. 80	−10. 57	298 49 25. 7	25. 2
Piazzi XVIII. 260..	18 55 48. 60	11	−0. 76	−10. 67	305 40 33. 2	24. 9
υ Sagittarii	19 15 57. 97	11	−0. 76	−10. 63	304 57 18. 7	25. 6
λ Ursae Minoris.....	19 28 30. 05	4	−5. 96	[−10. 64]	50 2	....
51 Aquilae...........	19 45 15. 22	11	−0. 74	−10. 62	310 4 41. 6	25. 6

h 18. 098............*dt* .... s −10. 580

Hourly rate .... − 0. 0390

Adopted Equator Point........ 321° 6′ 24″. 91

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 34	29. 890	81. 0	79. 4
18 37	29. 888	79. 8	78. 3
19 58	29. 885	77. 8	76. 0

Note.
51 Aquilae. Star images very steady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
303	−0. 774
304	0. 770
305	0. 765
306	−0. 760

APPARENT RIGHT ASCENSION.	*A* = α to 1900.0 303°	304°	305°	306°	*D* = Z. D. N. to 1895.0 303°	304°	305°	306°
h m	s	s	s	s	″	″	″	″
18 0	+14. 034	+13. 929	+13. 825	+13. 723	+7. 54	+7. 28	+7. 03	+6. 77
18 30	13. 877	13. 775	13. 675	13. 574	4. 97	4. 75	4. 52	4. 30
19 0	13. 707	13. 612	13. 515	13. 420	+2. 21	+2. 04	+1. 85	+1. 66
19 30	13. 529	13. 439	13. 348	13. 260	−0. 65	−0. 80	−0. 95	−1. 10
20 0	+13. 344	+13. 262	+13. 180	+13. 098	−3. 62	−3. 72	−3. 84	−3. 94

APPARENT RIGHT ASCENSION.	*R* 303°	304°	305°	306°
h m	″	″	″	″
18 0	84. 24	81. 13	78. 16	75. 35
18 30	84. 33	81. 23	78. 25	75. 44
19 0	84. 45	81. 34	78. 36	75. 54
19 30	84. 59	81. 47	78. 49	75. 67
20 0	84. 72	81. 60	78. 61	75. 79

1895 AUGUST 9. ZONE 133. CLAMP WEST

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.9	23.3	25.4	27.6	29.8	32.0	c	51 27.62	303 0 10.0 9.6	V 42.530	17 51 30.28	−18 2 46.43	−18 4722
2	9.1	32.2	34.3	36.0	38.0	40.3	a	57 6.34	303 2 10.0 10.4	I B 41.205	17 57 8.97	18 4 19.55	18 4766
3	9.1	12.7	14.8	17.0	19.1	21.5	c	57 17.02	303 2 " "	III A 38.740	17 57 19.64	17 58 39.89	17 5000
4	9.0	43.4	45.6	47.7	50.0	52.0	c	57 47.74	303 2 " "	III B 45.870	17 57 50.37	18 2 51.56	18 4769
5	8.9	8.0	10.2	14.5	16.2	18.9	c$_4$ d$_3$	58 5.91	304 4 10.0 10.4	VI 50.100	17 58 8.42	16 56 16.03	16 4697
6	8.7	42.3	44.7	46.8	49.0	51.3	c	58 46.82	304 4 " "	V C 51.795	17 58 49.34	17 2 8.64	17 5007
7	9.2	49.7	52.0	54.0	56.3	58.6	c	0 54.12	303 0 10.0 9.7	III B 45.210	18 0 56.73	18 5 3.56	18 4791
8	8.6	42.7	44.8	47.0	49.3	51.4	c	1 47.04	303 0 " "	III 43.840	18 1 49.65	18 2 16.26	18 4795
9	9.0	30.5	32.5	34.5	36.4	38.7	a	3 4.52	304 8 10.0 10.1	I C 44.165	18 3 7.00	17 0 31.00	17 5037
10	8.9	15.2	17.1	19.0	21.0	23.2	a	3 49.08	304 8 " "	I A 42.620	18 3 51.54	−16 51 18.45	−16 4728
11	8.3	13.5	15.5	17.5	19.4	21.7	a	4 47.50	304 8 " "	I A 44.800	18 4 49.96	−16 50 36.33	−16 4737
12	8.9	39.0	41.0	43.3	45.5	47.7	c	4 43.30	304 18 10.5 11.2	V B 49.500	18 4 45.75	16 45 36.80	16 4736^{1}
13	8.8	9.2	11.5	13.3	15.4	17.3	e	4 43.46	304 18 " "	VII (B) 48.090	18 4 45.91	16 46 5.19	16 4736^{2}
14	8.7	49.0	51.2	53.2	55.0	57.0	e	5 23.21	304 18 " "	V (46).175	18 5 25.65	16 43 26.88	16 4744
15	8.7	23.0	25.0	27.1	29.1	31.0	e	5 57.14	304 6 10.0 10.2	VII 47.900	18 5 59.60	16 54 56.02	16 4747
16	8.0	56.0	58.0	59.9	1.8	4.0	a	9 29.92	304 10 10.0 9.7	I 45.320	18 9 32.35	16 51 40.34	16 4771
17	8.9	30.0	32.2	34.1	36.2	38.7	c	9 34.24	304 10 " "	V A 41.980	18 9 36.67	16 49 30.58	16 4773
18	9.1	13.5	15.7	18.0	20.1	22.3	c	10 17.92	304 10 " "	III 42.550	18 10 20.35	16 52 34.77	16 4779
19	9.1	49.4	51.6	53.4	55.6	57.5	e	10 23.61	304 10 " "	V A 40.475	18 10 26.04	16 50 0.67	16 4781
20	9.0	22.0	24.0	26.3	28.5	30.5	c	11 26.26	304 10 " "	V C 46.420	18 11 28.69	−16 57 48.41	−16 4790
21	9.3	51.0	53.0	55.4	59.6	1.1	c$_3$ d$_2$	11 50.95	304 10 " "	V B 49.690	18 11 53.37	−16 53 32.00	−16 4797
22	9.1	4.5	6.5	8.4	10.2	12.6	a	13 38.57	303 18 10.0 10.0	I B 48.700	18 13 41.07	17 45 49.37	17 5130
23	7.0	23.5	25.5	27.3	29.2	31.6	a	13 57.56	303 18 " "	III B 43.510	18 14 0.07	17 47 30.61	17 5133
24	8.9	12.1	14.2	16.0	17.9	20.3	a	14 46.24	303 18 " "	I B 43.450	18 14 48.74	17 47 29.73	17 5144
25	9.1	44.2	46.5	48.4	50.8	52.9	c	14 48.56	303 18 " "	III A 40.500	18 14 51.05	17 41 59.39	17 5145
26	9.1	52.9	55.0	57.2	59.4	1.6	c	15 57.22	304 4 10.0 9.9	III B (50).230	18 15 59.63	16 59 18.86	17 5157
27	9.1	26.2	28.4	30.6	32.8	34.9	c	16 30.58	304 4 " "	III 50.910	18 16 32.98	16 55 52.33	16 4839
28	8.5	55.1	57.4	59.3	1.7	3.9	c	16 59.48	304 4 " "	V 43.100	18 17 1.89	16 58 23.39	16 4847
29	9.0	18.9	21.0	25.3	27.0	29.6	c$_4$ d$_3$	17 16.71	304 4 " "	VI C 45.770	18 17 19.13	17 3 58.54	17 5172
30	9.0	22.6	24.9	27.1	29.4	31.5	c	18 27.10	302 52 10.0 10.1	V 48.530	18 18 29.62	−18 8 41.96	−18 4944
31	9.0	19.2	21.3	23.5	25.7	28.0	c	19 23.54	303 28 10.0 9.7	III 43.150	18 19 26.00	−17 34 22.03	−17 5187
32	8.0	43.4	45.6	47.7	50.0	52.2	c	20 47.78	303 20 10.0 9.3	V 42.060	18 20 50.24	17 42 44.38	17 5194
33	9.0	20.2	22.3	24.4	26.6	28.7	c	21 24.44	304 2 10.0 9.2	V 45.630	18 21 26.82	16 59 33.75	17 5199
34	8.9	8.5	10.6	12.5	14.4	16.6	a	22 42.53	304 2 " "	I B 46.670	18 22 44.91	17 2 23.55	17 5207
35	9.1	21.5	23.7	25.9	28.1	30.3	c	25 25.90	303 10 10.0 9.3	III 47.590	18 25 28.34	17 50 55.82	17 5221
36	9.0	36.4	38.2	40.1	42.0	44.5	a	28 10.35	303 22 10.0 10.0	I A 43.910	18 28 12.75	17 36 47.45	17 5236
37	9.1	15.7	18.0	20.2	22.4	24.5	c	28 20.16	303 22 " "	III C 44.790	18 28 22.58	17 46 13.81	17 5238
38	8.7	17.0	19.1	21.0	22.8	25.1	a	30 51.05	303 48 10.0 9.5	I B 43.640	18 30 53.40	17 17 19.37	17 5259
39	9.1	......	17.7	19.6	21.6	24.0	a	31 49.78	303 48 " "	I 42.280	18 31 52.13	17 14 32.06	17 5268
40	9.0	50.9	53.0	55.2	57.4	59.4	c	31 55.18	303 48 " "	III 41.835	18 31 57.53	−17 14 42.13	−17 5269
41	7.7	26.6	28.8	30.7	32.7	34.7	e	32 0.73	303 48 " "	VII (B) 38.770	18 32 3.08	−17 18 57.05	−17 5271
42	9.1	7.9	10.0	12.2	14.5	16.6	c	34 12.24	303 10 10.0 9.6	III 45.260	18 34 14.63	17 51 37.37	17 5281
43	8.8	25.3	27.5	29.8	31.9	34.1	c	35 29.72	303 58 10.0 10.1	III C 45.170	18 35 32.04	17 10 2.33	17 5288
44	7.5	15.6	17.9	19.9	22.3	24.4	c	36 20.02	303 58 " "	III B 46.590	18 36 22.33	17 6 21.91	17 5291
45	8.0	57.4	59.6	1.8	4.0	6.0	c	38 1.76	303 58 " "	III 48.880	18 38 4.05	17 2 24.08	17 5303
46	7.7	11.7	13.7	15.5	17.4	19.7	a	39 45.72	303 22 10.0 10.2	I 47.450	18 39 48.06	17 38 51.03	17 5310
47	9.3	7.0	9.2	11.2	13.6	15.8	c	42 11.36	303 58 9.3 9.0	III A 47.590	18 42 13.62	16 59 32.98	17 5319
48	8.6	49.8	52.0	54.0	56.4	58.5	(c)	42 54.14	303 58 " "	III C 49.040	18 42 56.41	17 8 46.47	17 5324
49	9.3	12.9	15.0	17.2	19.5	21.5	c	43 17.22	303 58 " "	V A 47.270	18 43 19.48	16 59 40.27	17 5326
50	8.0	41.9	44.0	46.2	48.4	50.6	c	43 46.22	303 58 " "	V A 42.940	18 43 48.48	−17 1 3.18	−17 5332
51	9.4	24.7	27.0	29.2	31.2	33.0	e	43 59.10	303 58 " "	V (A) 40.090	18 44 1.36	−17 1 58.80	−17 5334
52	8.9	27.6	29.8	31.9	34.2	36.3	c	45 31.96	304 2 9.7 9.6	III 46.360	18 45 34.21	16 59 10.15	17 5349
53	9.0	7.3	9.4	11.5	13.7	16.0	c	46 11.58	304 2 " "	III 46.820	18 46 13.82	16 59 1.10	17 5353
54	9.1	41.5	43.7	45.8	48.0	50.2	c	47 45.84	304 2 " "	III B 43.370	18 47 48.07	17 3 20.07	17 5362
55	9.0	56.7	58.9	1.0	3.2	5.5	c	49 1.06	303 20 10.0 9.0	III 47.960	18 49 3.34	17 40 40.40	17 5372
56	9.1	24.0	26.1	28.2	30.5	32.6	c	49 28.28	303 20 " "	III B 43.135	18 49 30.57	17 45 26.14	17 5375
57	9.0	57.9	0.0	2.1	4.4	6.6	c	50 2.20	303 20 " "	III 42.230	18 50 4.48	17 42 30.03	17 5381
58	9.1	34.6	36.7	38.9	41.1	43.3	c	50 38.92	304 10 10.2 10.4	V 46.340	18 50 41.11	16 51 9.15	16 5087
59	9.4	21.7	23.9	26.0	28.2	30.2	c	52 26.00	303 0 10.0 9.0	III B 48.050	18 52 28.30	18 3 51.83	18 5147
60	8.0	53.5	55.7	57.8	59.9	2.3	c	52 57.84	303 0 " "	III B 46.140	18 53 0.14	−18 4 28.31	−18 5153
61	7.8	31.8	34.0	36.1	38.4	40.6	c	53 36.18	303 0 " "	III 47.020	18 53 38.47	−18 0 57.92	−18 5156
62	9.2	15.3	17.5	19.6	21.8	23.9	c	54 19.62	303 0 " "	III B 46.840	18 54 21.91	18 4 14.42	18 5162
63	7.8	48.5	50.7	52.8	55.0	57.2	(c)	54 52.84	303 40 9.5 8.5	V 45.910	18 54 55.06	17 21 18.69	17 5414
64	8.0	12.7	14.8	16.9	19.1	21.3	c	56 16.96	304 4 10.0 9.3	III B 47.830	18 56 19.14	16 59 51.54	17 5427
65	9.0	58.9	1.0	3.2	5.5	7.7	c	57 3.26	304 4 " "	III B 50.600	18 57 5.43	−16 58 58.15	−17 5434

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
66	8.2	11.0	13.2	15.3	17.6	19.7	c	58 15.36	304	4	10.0	9.3	III (C)	50.190	18 58 17.53	−17 2 18.52	−17 5445
67	8.9	57.0	59.1	1.3	3.6	5.8	c	59 1.36	304	4	"	"	III B	45.650	18 59 3.52	17 0 32.48	17 5454
68	9.5	20.3	22.5	24.6	26.7	29.0	c	59 24.62	304	4	"	"	III	48.190	18 59 26.77	16 56 30.33	17 5458
69	8.8	51.8	54.1	56.0	58.0	59.8	e	59 26.03	304	4	"	"	VII B	44.380	18 59 28.19	17 0 59.60	17 5459
70	9.2	31.4	33.6	35.7	38.0	40.2	c	0 35.78	304	4	"	"	III A	43.270	19 0 37.93	−16 54 48.99	−16 5148
71	9.1	8.8	11.0	13.3	15.4	17.6	c	2 13.22	303	12	10.0	9.3	III	44.850	19 2 15.44	−17 49 36.03	−17 5487
72	8.0	1.9	4.0	6.2	8.4	10.5	c	3 6.20	303	24	10.0	9.4	III B	43.020	19 3 8.40	17 41 23.50	17 5493
73	8.9	9.7	11.8	14.0	16.3	18.4	c	4 14.04	303	24	"	"	III B	47.380	19 4 16.24	17 39 59.47	17 5501
74	9.0	52.0	54.0	55.8	57.7	0.1	a	5 26.03	303	24	"	"	I	50.510	19 5 28.21	17 35 44.18	17 5510
75	9.1	21.6	23.6	25.6	27.4	29.7	a	6 55.61	303	50	10.0	9.0	I	50.740	19 6 57.74	17 9 38.22	17 5521
76	9.0	0.9	3.0	5.1	7.5	9.6	c	7 5.22	303	50	"	"	III	50.230	19 7 7.35	17 9 49.51	17 5522
77	9.1	22.0	24.0	26.3	28.5	30.5	c	7 26.26	303	50	"	"	III C	49.790	19 7 28.40	17 16 24.03	17 5525
78	9.1	51.8	53.9	56.0	58.3	0.5	c	8 56.10	303	50	"	"	III	45.570	19 8 58.22	17 11 18.36	17 5534
79	9.2	3.4	5.6	7.7	10.0	12.0	c	9 7.74	303	50	"	"	V B	42.110	19 9 9.87	17 15 39.53	17 5537
80	8.0	21.6	23.7	25.9	28.1	30.3	c	10 25.92	303	50	"	"	III A	43.210	19 10 28.02	−17 8 47.77	−17 5546
81	8.9	10.4	12.6	14.7	17.0	19.2	c	11 14.78	303	50	"	"	III B	47.760	19 11 16.88	−17 13 48.85	−17 5555
82	9.2	55.7	57.9	59.6	1.7	4.0	a	12 29.82	303	50	"	"	I	46.560	19 12 31.91	17 10 56.68	17 5570
83	9.1	29.7	31.8	34.0	36.3	38.3	c	12 34.02	303	50	"	"	III B	42.440	19 12 36.12	17 15 30.56	17 5571
84	9.0	50.2	52.4	54.5	56.9	58.9	c	12 54.58	303	50	"	"	III	45.370	19 12 56.67	17 11 20.92	17 5574
85	9.2	48.4	50.6	52.8	54.9	57.0	c	13 52.74	303	50	"	"	III	44.790	19 13 54.82	17 11 31.76	17 5584
86	7.8	33.2	34.7	38.9	41.1	43.3	b_2 c_3	14 43.31	303	50	"	"	III B	47.870	19 14 45.39	17 13 45.65	17 5588
87	9.2	14.2	16.3	18.5	20.5	22.3	e	14 48.39	303	42	10.0	8.7	V	47.280	19 14 50.48	17 18 45.54	17 5589
88	9.4	39.8	41.9	44.0	48.3	50.0	(c_3d_2)	15 39.72	303	42	"	"	V B	39.110	19 15 41.81	17 24 35.55	17 5597
89	7.9	19.2	21.5	23.5	25.4	27.3	e	15 53.40	303	42	"	"	VII C	45.040	19 15 55.49	17 25 55.17	17 5598
90	8.0	......	14.5	18.7	20.5	23.3	c_5 d_3	17 10.20	303	18	10.0	9.5	VI	47.410	19 17 12.31	−17 42 43.64	−17 5604
91	......	50.1	52.4	54.5	58.9	0.4	c_3 d_2	17 50.17	303	18	"	"	V B	42.880	19 17 52.29	−17 47 23.27	−17 5608
92	9.2	5.3	7.3	9.6	11.7	13.9	c	19 9.56	303	18	"	"	III	49.760	19 19 11.66	17 41 56.00	17 5617
93	9.0	29.2	31.4	33.6	35.8	37.9	c	20 33.58	303	40	10.0	9.6	III	49.760	19 20 35.64	17 19 54.45	17 5629
94	9.1	10.5	12.6	14.8	17.1	19.3	c	23 14.86	303	14	9.7	8.0	III	47.980	19 23 16.94	17 46 30.01	17 5643
95	8.9	9.8	12.1	14.2	16.4	18.6	c	24 14.22	303	14	"	"	III	49.400	19 24 16.29	17 46 2.43	17 5647
96	9.0	32.0	34.0	36.2	38.4	40.6	c	25 36.24	303	14	"	"	III (C)	47.820	19 25 38.32	17 52 58.53	17 5655
97	9.0	31.4	33.6	35.8	38.0	40.2	c	27 35.80	303	50	10.0	8.2	III C	50.140	19 27 37.81	17 16 11.40	17 5665
98	9.4	16.0	18.2	20.3	22.7	24.7	c	28 20.38	303	50	"	"	III	49.000	19 28 22.38	17 10 6.85	17 5671
99	9.4	44.5	46.8	48.8	51.0	53.2	c	28 48.86	303	50	"	"	V B	42.900	19 28 50.86	17 15 18.59	17 5673
100	8.8	19.7	21.8	23.6	25.5	27.8	a	30 53.78	303	30	10.0	8.4	I B	48.900	19 30 55.80	−17 33 20.40	−17 5685
101	8.6	26.5	28.7	30.8	33.1	35.3	c	31 30.88	303	42	10.0	8.5	III B	41.930	19 31 32.88	−17 23 35.08	−17 5690
102	9.0	51.4	53.6	55.6	57.8	59.9	c	32 55.66	303	42	"	"	III	45.440	19 32 57.64	17 19 14.00	17 5696
103	9.5	5.5	7.7	9.7	11.8	14.0	c	34 9.74	303	42	"	"	III A	42.835	19 34 11.70	17 16 48.27	17 5703
104	9.3	53.6	55.8	58.0	0.2	2.4	c	35 58.00	304	12	10.0	8.9	III B	43.070	19 35 59.92	16 53 10.25	16 5407
105	......	46.9	49.0	50.8	52.7	55.0	a	37 20.85	304	12	"	"	I (A)	41.680	19 37 22.75	16 47 6.14	16 5421
106	8.0	38.8	41.0	43.2	45.4	47.4	c	38 43.16	303	22	10.0	9.2	III (A)	38.050	19 38 45.12	17 38 19.36	17 5732
107	9.1	59.3	1.5	3.7	5.9	8.0	c	39 3.68	303	22	"	"	V	41.670	19 39 5.65	17 40 26.52	17 5733
108	9.1	26.4	28.7	30.9	35.2	36.8	c_3 d_2	39 26.51	303	22	"	"	V B	41.490	19 39 28.48	17 43 43.34	17 5736
109	9.1	46.2	48.6	50.8	52.9	55.1	c	59 50.72	303	2	10.0	9.0	III	45.750	19 59 52.57	17 59 2.05	18 5590
110	9.3	39.0	41.3	43.4	45.8	47.8	c	1 43.46	303	46	10.5	9.9	III	45.840	20 1 45.23	−17 14 56.94	−17 5861
111	9.2	55.0	57.3	59.3	1.5	3.5	c	1 59.32	303	46	"	"	V B	49.120	20 2 1.10	−17 17 8.74	−17 5864
112	9.2	4.2	6.5	8.5	10.6	13.0	c	4 8.56	303	36	10.0	8.2	III	48.820	20 4 10.34	17 24 0.67	17 5875
113	8.6	51.0	53.0	54.9	57.0	59.3	a	5 25.09	303	48	10.0	9.4	III B	46.900	20 5 26.85	17 15 49.25	17 5884
114	9.4	52.9	54.9	57.0	58.9	1.0	a	6 26.97	303	48	"	"	I A	46.030	20 6 28.72	17 9 35.29	17 5891
115	9.7	29.1	31.0	33.1	35.4	37.8	c	6 33.29	303	48	"	"	III C	44.260	20 6 35.05	17 19 52.53	17 5893
116	8.5	57.6	59.6	1.4	3.4	5.7	a	7 31.58	303	48	"	"	III A	42.320	20 7 33.32	17 10 47.92	17 5901
117	9.6	36.7	38.9	41.0	45.3	47.0	c_3 d_2	7 36.71	303	48	"	"	VI	48.550	20 7 38.45	17 12 5.67	17 5903
118	9.5	16.5	18.6	20.6	22.5	24.5	e	7 50.58	303	48	"	"	VII B	46.560	20 7 52.33	17 15 58.02	17 5904
119	8.0	25.7	27.9	29.9	32.3	34.5	c	9 30.06	303	48	"	"	III A	47.090	20 9 31.79	17 9 15.84	17 5913
120	9.0	34.3	36.3	38.5	40.7	42.9	c	10 38.54	303	48	"	"	III A	44.340	20 10 40.26	−17 10 8.31	−17 5921
121	8.7	20.9	23.2	25.1	27.4	29.7	c	11 25.26	303	48	"	"	III B	42.680	20 11 26.99	−17 17 8.65	−17 5924

Reduction Elements. Zone 133.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
August 9.3....	−0.311	−0.209		−0.278	−0.210	−0.375
9.5....	−0.244	−0.211	−0.375			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	o Serpentis		Mayer 703		ν Ophiuchi		2 H. Scuti		51 Aquilae		63 Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	308 12 4. 15		302 16 9. 25		311 16 9. 70		306 24 9. 75		310 0 9. 25		307 6 9. 10	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq.	46. 880	6 14. 79	41. 610	4 32. 88	44. 775	5 33. 54	44. 435	5 27. 25	44. 930	5 36. 85	45. 700	5 51. 58
II | Red. to Mer.	. 955	0. 13	. 645	0. 19	. 810	0. 10	. 515	0. 15	. 970	0. 11	. 725	0. 14
VI | Inclination	47. 120		. 780		. 945		. 610		45. 120		. 930	
VII | Refraction	. 160	1 8. 8	. 825	1 25. 8	. 980	1 1. 8	. 640	1 13. 6	. 180	1 5. 0	. 920	1 12. 1

	α^2 Capricorni		β Capricorni	
	° ′ ″		° ′ ″	
CIRCLE READING.	308 10 9. 35		305 56 9. 15	
	r	′ ″	r	′ ″
I | Microm. Eq.		5 19. 10	42. 555	4 50. 65
II | Red. to Mer.	44. 025	0. 11	. 605	0. 15
VI | Inclination	. 160	−0. 67	. 700	
VII | Refraction	. 190	1 9. 5	. 710	1 15. 4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
o Serpentis	17 35 45. 48	11	−0. 72	−10. 75	308 17 10. 3	26. 1
Mayer 703	17 49 59. 27	11	−0. 75	−10. 67	302 19 16. 5	24. 7
ν Ophiuchi	17 53 29. 42	11	−0. 71	−10. 69	311 20 41. 5	24. 8
2 H. Scuti	18 23 27. 68	11	−0. 73	−10. 66	306 28 23. 6	25. 0
λ Ursae Minoris	19 28 30. 58	4	−7. 03	[−10. 74]	50 2	. . . .
51 Aquilae	19 45 15. 16	11	−0. 71	−10. 66	310 4 41. 2	25. 2
63 Sagittarii	19 56 20. 94	11	−0. 72	−10. 76	307 10 48. 7	25. 0
α^2 Capricorni	20 12 29. 05	11	−0. 72	−10. 81	308 14 18. 4	25. 6
β Capricorni	20 15 22. 12	11	−0. 73	−10. 82	305 59 44. 6	25. 1

h 17. 928 . . . . *dt* . . . . s −10. 692

Hourly rate . . . . − 0. 0265

Adopted Equator Point . . . . 321° 6′ 25.″ 19

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 55	29. 868	83. 5	82. 2
18 40	29. 866	82. 4	81. 0
19 41	29. 850	80. 2	79. 2
20 17	29. 850	79. 5	78. 1

Notes.

57. Faint companion north, same right ascension.

112. Suspected double.

115. Very difficult.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900. 0			$D =$ Z. D. N. to 1895. 0			R		
			303°	304°	305°	303°	304°	305°	303°	304°	304° 30′
°	s	h m	s	s	s	″	″	″	″	″	″
303	−0. 743	17 30	+14. 192	+14. 085	+13. 980	+9. 85	+9. 56	+9. 28	83. 54	80. 46	78. 98
304	0. 739	18 0	14. 048	13. 944	13. 841	7. 53	7. 27	7. 01	83. 68	80. 59	79. 10
305	−0. 734	18 30	13. 890	13. 787	13. 687	4. 97	4. 74	4. 51	83. 81	80. 72	79. 23
		19 0	13. 718	13. 622	13. 526	+2. 22	+2. 03	+1. 84	83. 95	80. 85	79. 36
		19 30	13. 536	13. 446	13. 356	−0. 65	−0. 80	−0. 95	84. 06	80. 97	79. 47
		20 0	13. 348	13. 266	13. 185	3. 61	3. 73	3. 84	84. 22	81. 12	79. 62
		20 30	+13. 157	+13. 085	+13. 012	−6. 61	−6. 68	−6. 75	84. 35	81. 25	79. 74

1895 AUGUST 10. ZONE 134. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	9. 0	26. 2	28. 2	30. 3	32. 5	34. 6	c	7 30. 36	306 34	10. 0	9. 2	III	45. 280	18 7 32. 49	14 27 37. 01	−14 4934
2	9. 4	55. 2	57. 3	59. 5	1. 6	3. 9	c	7 59. 50	306 50	10. 0	8. 7	V	44. 060	18 8 1. 60	14 12 1. 21	14 4940
3	9. 5	33. 8	36. 0	38. 0	40. 3	42. 4	c	9 38. 10	307 6	10. 0	9. 1	III	42. 820	18 9 40. 17	13 56 22. 25	13 4893
4	9. 2	14. 5	16. 6	18. 7	20. 9	23. 1	c	10 18. 76	306 42	10. 0	9. 6	III	43. 120	18 10 20. 86	14 20 16. 94	14 4956
5	9. 3	4. 3	6. 3	8. 6	10. 9	13. 0	c	11 8. 62	306 32	10. 2	10. 2	V	41. 060	18 11 10. 74	14 30 57. 51	14 4965
6	8. 9	43. 0	45. 1	47. 2	49. 4	51. 3	c	11 47. 20	306 32	"	"	III	46. 175	18 11 49. 31	14 29 17. 80	14 4971
7	9. 3	5. 4	7. 6	9. 6	11. 8	13. 9	c	12 9. 66	306 32	"	"	V	43. 960	18 12 11. 77	14 30 1. 51	14 4976
8	9. 3	46. 1	48. 2	50. 4	52. 5	54. 7	c	13 50. 38	306(12)	10. 0	9. 7	III	46. 710	18 13 52. 52	14 49 7. 97	14 4997
9	9. 0	26. 2	28. 4	30. 6	32. 7	34. 9	c	14 30. 56	306(12)	"	"	III B	43. 680	18 14 32. 70	14 53 19. 13	14 5002
10	9. 3	12. 7	14. 6	16. 5	18. 4	20. 7	a	22 46. 19	306 52	10. 0	10. 5	I B	43. 170	18 22 48. 22	−14 13 22. 30	−14 5067
11	9. 2	57. 9	59. 9	2. 2	4. 4	6. 5	c	23 2. 18	306 52	"	"	III C	47. 880	18 23 4. 21	−14 15 6. 41	−14 5069
12	8. 9	37. 6	39. 5	41. 3	43. 3	45. 6	a	24 11. 06	306 52	"	"	I	49. 460	18 24 13. 08	14 8 8. 07	14 5078
13	9. 0	14. 1	16. 3	18. 5	20. 6	22. 8	c	24 18. 46	306 8	10. 0	10. 0	V	49. 265	18 24 20. 55	14 52 16. 63	14 5080
14	9. 2	5. 8	7. 8	9. 8	12. 0	14. 2	c	25 9. 92	306 8	"	"	III C	45. 970	18 25 12. 02	−14 59 44. 37	−15 4995[1]

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
15	9.0	19.7	21.9	23.8	25.6	27.9	a	26 53.49	306 8 10.0 10.0	I C 48.120	18 26 55.58	−14 59 1.16	−15 5005
16	6.	54.4	56.6	58.6	0.9	3.0	c	26 58.70	306 8 “ “	III B 46.710	18 27 0.78	14 56 16.65	14 5099
17	6.5	49.9	52.0	54.2	56.3	58.5	c	27 54.18	306 8 “ “	III B 48.530	18 27 56.26	14 55 41.39	14 5106
18	9.2	36.3	38.5	40.1	42.0	44.4	a	29 9.94	306 14 10.0 10.3	I 47.710	18 29 11.99	14 46 41.53	14 5117
19	9.0	6.7	8.7	10.9	13.0	15.2	c	29 10.90	306 14 “ “	III 47.420	18 29 12.95	14 46 48.61	14 5118
20	8.8	26.1	28.2	30.3	32.5	34.7	c	30 30.36	307 12 10.0 10.0	III C 48.570	18 30 32.32	−13 54 50.04	−13 5046
21	8.9	1.0	3.0	5.0	7.0	8.9	e	30 35.52	307 12 “ “	V 47.150	18 30 37.47	−13 48 52.46	−13 5047
22	8.6	7.1	9.3	11.5	13.7	15.7	c	33 11.46	307 12 “ “	III B 47.830	18 33 13.40	13 51 50.45	13 5060
23	9.4	25.2	27.5	29.5	31.3	33.3	e	33 59.71	305 44 10.0 10.4	V 49.250	18 34 1.79	15 16 14.35	15 5050
24	8.5	6.8	8.9	11.1	13.2	15.4	c	35 11.08	306 24 10.0 9.5	III 50.280	18 35 13.08	14 35 51.65	14 5152
25	6.5	54.6	56.7	58.8	1.0	3.0	c	35 58.82	306 24 “ “	III B 49.000	18 36 0.83	14 39 29.21	14 5156
26	9.3	34.3	36.5	38.7	40.7	42.7	c	36 38.58	306 24 “ “	V B 44.380	18 36 40.58	14 40 59.15	14 5157
27	9.5	46.4	48.7	51.0	53.1	55.1	c	39 50.86	306 14 10.0 9.5	III A 40.000	18 39 52.86	14 45 52.36	14 5179
28	9.4	2.0	4.3	6.4	8.5	10.8	c	41 6.40	306 14 “ “	III B 46.100	18 41 8.39	14 50 23.50	14 5188
29	7.0	24.0	26.2	28.3	30.6	32.7	c	42 28.36	306 14 “ “	III B 50.360	18 42 30.34	14 49 1.30	14 5195
30	8.7	34.5	36.7	38.7	40.9	43.1	c	43 38.78	306 32 10.0 10.2	III 42.120	18 43 40.72	−14 30 24.69	−14 5198
31	8.9	39.5	41.6	43.8	45.9	48.1	c	44 43.78	306 32 “ “	III 43.450	18 44 45.71	−14 29 58.80	−14 5204
32	7.8	27.7	29.8	32.0	34.1	36.3	c	49 31.98	306 12 10.0 10.0	III 46.240	18 49 33.92	14 49 4.56	14 5225
33	8.2	27.8	29.9	32.2	34.4	36.4	c	58 32.14	306 36 10.0 10.0	III B 44.350	18 58 34.00	14 28 50.08	14 5277
34	9.1	16.2	18.4	20.6	22.8	24.9	c	3 20.58	306 36 9.5 10.0	III 47.420	19 3 22.41	14 24 36.59	14 5301
35	7.0	38.4	40.4	42.3	44.1	46.5	a	6 12.02	306 16 10.0 9.5	I 46.140	19 6 13.87	14 44 59.52	14 5317
36	8.8	34.9	36.9	38.8	40.6	42.9	a	7 8.45	306 36 10.0 9.4	I 48.030	19 7 10.26	14 24 22.19	14 5327
37	......	46.0	48.1	50.2	52.4	54.6	c	7 50.26	307 6 10.0 9.1	III 47.650	19 7 52.02	13 54 29.71	13 5275
38	9.1	15.2	17.4	19.5	21.8	23.8	c	8 19.54	306 6 10.0 9.3	V B 45.420	19 8 21.39	14 58 29.47	15 5282
39	9.3	17.5	19.5	21.3	23.1	25.3	a	9 51.04	306 6 “ “	I A 41.785	19 9 52.88	14 53 6.87	14 5351
40	8.5	55.0	57.2	59.4	1.5	3.7	c	9 59.36	306 6 “ “	III C 48.470	19 10 1.21	−15 0 41.74	−15 5290
41	9.3	46.7	48.7	50.6	52.4	54.8	a	12 20.34	306 6 “ “	I 43.870	19 12 22.17	−14 55 41.62	−15 5304
42	9.1	23.3	25.4	27.3	29.2	31.4	a	12 57.03	306 6 “ “	I B 43.485	19 12 58.86	14 59 1.86	15 5308
43	9.0	5.3	7.6	9.9	12.0	14.0	c	13 9.76	306 46 10.5 10.1	III B 41.830	19 13 11.53	14 19 32.95	14 5382
44	7.7	47.6	49.7	51.7	53.9	56.1	c	13 51.80	306 46 “ “	V B 39.970	19 13 53.57	14 20 10.00	14 5387
45	9.5	18.4	20.6	22.7	24.9	26.9	c	14 22.70	306 46 “ “	V A 41.290	19 14 24.45	14 13 15.92	14 5391
46	8.0	59.6	1.7	3.8	6.0	8.2	c	16 3.86	306 46 “ “	III A 41.190	19 16 5.60	14 13 15.67	14 5404
47	8.4	28.7	30.7	32.4	34.3	36.7	a	17 2.17	306 46 “ “	I A 40.030	19 17 3.91	14 13 35.95	14 5411
48	9.4	0.7	2.9	5.0	7.3	9.4	c	17 5.06	306 46 “ “	V 44.770	19 17 6.80	14 15 23.37	14 5412
49	9.4	59.6	1.8	4.0	6.1	8.1	c	18 3.92	306 56 10.0 9.2	III (A) 43.960	19 18 5.64	14 2 22.20	14 5416
50	9.3	39.7	42.0	44.2	46.3	48.5	c	18 44.14	306 56 “ “	III (C) 45.120	19 18 45.87	−14 11 41.22	−14 5421
51	6.0	36.7	38.9	41.0	43.1	45.2	c	19 40.98	306 56 “ “	III 43.660	19 19 42.69	−14 5 42.80	−14 5428
52	9.3	15.0	17.2	19.4	21.5	23.6	c	20 19.34	307 8 10.0 9.4	V 45.940	19 20 21.03	13 52 59.62	13 5352
53	8.8	8.6	10.6	12.8	14.9	17.0	c	21 12.78	306 40 10.0 10.3	V 45.290	19 21 14.51	14 21 12.48	14 5437
54	9.2	18.7	20.8	22.8	24.9	27.1	c	26 22.86	306 4 10.0 9.0	III A 40.830	19 26 24.61	14 55 21.89	15 5379
55	9.2	37.2	39.5	41.6	43.8	46.0	c	27 41.62	306 4 “ “	III 42.190	19 27 43.37	14 58 10.75	15 5387
56	9.0	28.9	31.0	33.2	35.3	37.6	c	28 33.20	306 4 “ “	V B 39.550	19 28 34.95	15 2 15.98	15 5396
57	9.3	58.9	1.4	3.3	5.5	7.8	c	30 3.38	306 36 10.0 9.6	III 46.715	19 30 5.07	14 24 41.56	14 5470
58	9.2	23.9	26.1	28.3	30.5	32.7	c	30 28.30	306 36 “ “	V B 49.690	19 30 29.99	14 26 59.14	14 5472
59	5.8	21.2	23.1	25.0	27.0	29.1	a	31 54.72	306 36 “ “	I (C) 46.120	19 31 56.41	14 31 17.21	14 5479
60	8.9	47.8	49.9	52.1	54.3	56.5	c	31 52.12	306 24 10.0 9.7	V 44.180	19 31 53.81	−14 37 31.44	−14 5478
61	9.0	46.5	48.5	50.4	52.3	54.5	a	33 20.13	306 14 10.0 8.8	III 43.530	19 33 21.83	−14 47 43.00	−14 5489
62	9.0	35.8	37.6	39.4	41.3	43.7	a	34 9.17	306 46 10.0 9.2	III 44.555	19 34 10.82	14 15 21.54	14 5496
63	9.0	26.4	28.7	30.8	32.9	35.0	c	34 30.76	306 24 10.0 9.6	V 47.575	19 34 32.44	14 36 25.52	14 5499
64	9.2	59.9	1.9	4.2	6.3	8.5	c	35 4.16	306 24 “ “	V B 45.200	19 35 5.84	14 40 24.41	14 5501
65	9.4	44.2	46.3	48.5	50.7	52.9	c	46 48.52	307 2 10.0 9.2	III 43.115	19 46 50.08	13 59 44.71	14 5576
66	9.0	23.5	25.6	27.7	29.9	32.2	c	49 27.78	306 26 10.0 8.8	III A 45.210	19 49 29.37	14 31 50.08	14 5586
67	9.5	11.4	13.7	15.8	18.0	20.1	c	50 15.80	306 26 “ “	III C 45.870	19 50 17.40	14 41 18.69	14 5590
68	9.3	57.7	59.9	2.2	4.3	6.5	c	0 2.12	306 26 10.0 9.4	III B 48.970	20 0 3.65	14 37 3.20	14 5634
69	9.4	44.8	46.9	49.0	51.3	53.4	c	7 49.08	306 48 10.0 10.0	III 50.025	20 7 50.54	14 11 26.29	14 5672
70	8.6	28.5	30.7	32.7	34.9	37.0	c	8 32.76	306 48 “ “	III 49.300	20 8 34.21	−14 11 40.01	−14 5677
71	9.3	48.8	50.9	53.1	55.3	57.3	c	10 53.08	307 14 10.0 9.1	III B 40.160	20 10 54.49	−13 51 47.39	−13 5625
72	9.1	5.8	7.9	10.0	12.3	14.3	c	11 10.06	307 14 “ “	V A 47.435	20 11 11.46	13 43 0.59	13 5627
73	9.0	11.0	13.2	15.4	17.5	19.6	c	14 15.34	306 24 10.0 8.7	V A 40.490	20 14 16.79	14 35 15.33	14 5713
74	9.0	54.7	56.9	59.0	1.2	3.5	c	17 59.06	306 38 10.0 9.6	III A 42.760	20 18 0.47	14 20 28.23	14 5733
75	8.0	33.3	35.4	37.6	39.8	41.9	c	18 37.60	306 38 “ “	III B 45.280	20 18 39.02	14 26 8.34	14 5734
76	9.2	20.8	22.9	24.8	26.6	29.0	a	19 54.46	306 38 “ “	I B 42.885	20 19 55.87	14 26 52.24	14 5736
77	9.4	54.9	57.0	59.1	1.4	3.5	c	19 59.18	306 24 10.0 9.3	V B 43.490	20 20 0.61	14 40 45.26	14 5737
78	9.1	23.3	25.4	27.5	29.8	31.9	c	20 27.58	306 24 “ “	V 45.910	20 20 29.00	−14 36 44.59	−14 5740

Reduction Elements. Zone 134.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
August 10.3....	−0.299	−0.240	−0.224	−0.270	−0.216	−0.247
10.5....	0.240	0.193	−0.270			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		Mayer 703		ν Ophiuchi		5 H. Scuti		Piazzi XVIII. 260		63 Sagittarii		α^2 Capricorni	
	CIRCLE READING.	° ′ ″ 302 16 9.85		° ′ ″ 311 16 10.00		° ′ ″ 312 40 9.90		° ′ ″ 305 36 9.55		° ′ ″ 307 6 10.60		° ′ ″ 308 10 10.00	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	41.590	4 31.90	44.760	5 33.00	41.400	4 29.38	45.115	5 39.81	45.650	5 50.35		5 17.75
II	Red. to Mer.	.570	0.19	.800	0.10	.480	0.08	.130	0.15	.700	0.14	43.940	0.11
VI	Inclination	.740		.910		.610		.280		.805		44.075	−0.67
VII	Refraction	.755	1 25.2	.930	1 1.3	.640	58.6	.295	1 15.4	.860	1 11.5	.150	1 8.9

		β Capricorni		ρ Capricorni	
	CIRCLE READING.	° ′ ″ 305 56 9.00		° ′ ″ 302 52 9.20	
		r	′ ″	r	′ ″
I	Microm. Eq.		4 51.04	46.505	6 6.87
II	Red. to Mer.	42.535	0.13	.585	0.18
VI	Inclination	.730	−0.67	.670	
VII	Refraction	.720	1 14.7	.705	1 23.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

	NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
		h m s		s	s	° ′ ″	″
	Mayer 703	17 49 59.28	11	− 0.63	−10.81	302 19 16.7	24.9
ν	Ophiuchi	17 53 29.44	11	− 0.61	−10.82	311 20 41.8	24.9
δ	Ursae Minoris	18 6 26.89	5	− 3.94	[−11.21]	47 40	....
5	H. Scuti	18 38 3.16	11	− 0.60	−11.00	312 43 40.8	26.1
	Piazzi XVIII. 260	18 55 48.75	11	− 0.62	−10.98	305 40 34.1	25.7
λ	Ursae Minoris	19 28 34.40	3	−12.31	[− 9.94]	50 2	....
63	Sagittarii	19 56 21.01	11	− 0.62	−10.93	307 10 49.6	25.9
α^2	Capricorni	20 12 29.05	11	− 0.61	−10.92	308 14 18.3	25.3
β	Capricorni	20 15 22.10	11	− 0.62	−10.90	305 59 44.8	24.3
ρ	Capricorni	20 23 7.80	11	− 0.63	−10.92	302 56 52.5	24.5

h 18.320 . . . . *dt* . . . . s −10.902

Hourly rate . . . . — 0.0085

Adopted Equator Point . . . . ° ′ ″ 321 6 25.20

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 47	29.750	85.4	84.1
18 45	29.748	83.8	82.5
19 43	29.742	82.5	81.1
20 25	29.742	82.1	80.3

Note.

65. Fully as bright as recorded.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				$D =$ Z. D. N. to 1895.0				R		
			305°	306°	307°	308°	305°	306°	307°	308°	306°	307°	307° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
306	−0.619	18 0	......	+13.750	+13.648	+13.546	....	+6.70	+6.44	+6.18	74.32	71.66	70.39
307	0.616	18 30	−13.698	13.597	13.499	13.400	+4.49	4.26	4.03	3.80	74.44	71.78	70.50
308	−0.614	19 0	−13.534	13.438	13.343	13.249	+1.82	+1.62	+1.43	+1.23	74.54	71.88	70.60
		19 30	......	13.274	13.185	13.097	....	−1.14	−1.30	−1.45	74.64	71.98	70.70
		20 0	......	13.108	13.026	12.945	....	3.97	4.10	4.21	74.71	72.04	70.76
		20 30	......	+12.941	+12.868	+12.797	....	−6.84	−6 91	−6.99	74.80	72.13	70.84

1895 AUGUST 13. ZONE 135. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.1	27.5	29.8	32.0	34.1	36.2	c	8 31.92	303 2 10.0	9.9	III	48.260	18 8 34.41	−17 58 49.64	−17 5079
2	9.0	16.4	18.6	21.0	23.1	25.3	c	9 20.88	303 26 10.0	10.0	III B	42.010	18 9 23.34	17 40 1.40	17 5087
3	7.8	1.2	3.5	5.6	7.9	10.0	c	10 5.64	303 26 "	"	V B	47.260	18 10 8.08	17 38 21.92	17 5094
4	7.0	27.8	29.9	32.0	34.3	36.6	c	12 32.12	303 26 "	"	III	49.750	18 12 34.55	17 34 18.47	17 5121
5	8.7	36.2	38.2	40.3	42.6	44.7	c	16 40.40	303 42 10.0	10.5	V	41.180	18 16 42.78	17 21 1.82	17 5163
6	......	28.7	31.0	33.2	35.3	37.6	c	36 33.16	303 10 10.0	9.7	V C	49.000	18 36 35.48	17 56 52.84	17 5292
7	......	0.5	2.6	4.8	6.8	11.0	$c_2 d_1$	37 2.54	303 10 "	"	V	48.510	18 37 4.86	17 50 36.06	17 5295
8	7.8	35.2	37.4	39.5	41.9	43.9	c	43 39.58	304 12 10.0	9.9	III	43.400	18 43 41.76	16 50 7.55	16 5041
9	9.0	19.2	21.4	23.2	25.2	......	a	44 53.27	304 12 "	"	I B	46.265	18 44 55.45	16 52 23.69	16 5046
10	9.3	21.8	24.0	26.4	28.6	30.7	c	45 26.30	303 36 10.0	9.9	III C	48.220	18 45 28.54	−17 31 2.30	−17 5345
11	8.0	42.0	44.3	46.5	48.7	50.9	c	45 46.48	303 36 "	"	V	45.000	18 45 48.70	−17 25 39.15	−17 5350

Reduction Elements. Zone 135.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
August 13.3....	—0. 237	—0. 204	—0. 284	—0. 237	—0. 204	—0. 284

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Mayer 703		2 H. Scuti		Bradley 2329		5 H. Scuti		λ Aquilae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	302 16 9. 55		306 24 10. 25		309 58 10. 30		312 40 10. 00		316 0 9. 45	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	41. 620	4 33. 48	44. 470	5 28. 36	45. 360	5 45. 44		4 31. 83	42. 250	4 45. 65
II Red. to Mer......	. 655	0. 19	. 570	0. 15	. 410	0. 11		0. 08	. 315	0. 05
VI Inclination	. 830		. 680		. 570		41. 640	—1. 68	. 450	
VII Refraction.......	. 880	1 26. 3	. 710	1 14. 0	. 650	1 5. 1	. 680	59. 3	. 510	52. 9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Mayer 703	17 49 59. 19	11	—0. 62	[—10. 76]	302 19 16. 9	25. 0
δ Ursae Minoris......	18 6 24. 42	7	—2. 78	[—10. 90]	47 40	....
2 H. Scuti	18 23 27. 80	11	—0. 61	—10. 94	306 28 24. 8	26. 0
Bradley 2329.......	18 29 27. 18	11	—0. 60	—10. 92	310 2 50. 7	25. 4
5 H.Scuti	18 38 3. 07	11	—0. 59	—10. 94	312 43 40. 9	26. 0
λ Aquilae	19 0 55. 53	11	—0. 58	—10. 94	316 4 2. 3	24. 3

h 18. 633	.........*dt*	s —10. 935
	Hourly rate	0. 0000
	Adopted Equator Point..........	° ′ ″ 321 6 25. 34

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
18 25	29. 786	78. 6	77. 3
19 2	29. 783	77. 8	76. 3

Notes.

δ Ursae Minoris. Image very unsteady.

4, 5. Clouds after each of these.

λ Aquilae. Clouds.

REDUCTION TABLE FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	A = α to 1900. 0			D = Z. D. N. to 1895.0			R		
			303°	304°	305°	303°	304°	305°	303°	304°	304° 30′
°	s	h m	s	s	s	″	″	″	″	″	″
303	—0. 616	18 0	+14. 089	+13. 984	+13. 880	+7. 37	+7. 10	+6. 82	84. 14	81. 04	79. 54
304	0. 613	18 30	13. 922	13. 820	13. 719	4. 82	4. 58	4. 34	84. 26	81. 15	79. 65
305	—0. 611	19 0	+13. 740	+13. 644	+13. 548	+2. 10	+1. 88	+1. 67	84. 37	81. 26	79. 76

1895 SEPTEMBER 20. ZONE 136. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	......	13. 3	15. 4	19. 9	22. 0	26. 3	c_1 d_1	14 17. 65	303 22 10. 0 12. 6	III	46. 670	18 14 4. 21	—17 39 10. 59	—17 5135
2	......	0. 4	2. 4	4. 7	6. 9	9. 2	c	16 4. 72	303 42 10. 0 11. 9	V	45. 720	18 15 51. 24	17 19 28. 99	17 5155
3	......	52. 0	54. 1	56. 4	58. 6	0. 7	c	16 56. 36	303 42 " "	V	40. 900	18 16 42. 88	17 21 1. 20	17 5163
4	......	41. 0	43. 0	45. 1	47. 4	49. 5	c	17 45. 20	303 42 " "	V	43. 260	18 17 31. 70	17 20 15. 62	17 5173
5	......	36. 6	38. 7	40. 9	43. 1	45. 3	c	20 40. 92	304 8 10. 0 12. 2	V	47. 830	18 20 27. 37	16 52 45. 59	16 4872
6	......	21. 4	23. 4	25. 6	27. 8	30. 0	c	25 25. 64	306 2 10. 0 12. 6	III	44. 340	18 25 11. 87	14 59 44. 64	15 4995^1
7	......	......	53. 4	55. 6	57. 4	59. 3	e	25 25. 79	306 2 " "	VII	44. 950	18 25 12. 02	14 59 35. 45	15 4995^2
8	8. 9	10. 4	12. 6	14. 8	17. 1	19. 2	c	49 14. 82	303 44 10. 0 11. 5	III	45. 510	18 49 1. 10	17 17 20. 35	17 5371
9	9. 0	19. 0	21. 1	23. 2	25. 5	27. 6	c	50 23. 28	303 44 " "	III B	44. 815	18 50 9. 56	17 20 46. 57	17 5382
10	8. 8	11. 5	13. 6	15. 7	18. 0	20. 2	c	51 15. 80	303 44 " "	III C	49. 260	18 51 2. 08	—17 22 33. 85	—17 5389
11	9. 1	15. 3	17. 5	19. 7	22. 0	24. 1	c	52 19. 72	304 20 10. 0 12. 0	III	47. 840	18 52 5. 93	—16 40 32. 75	—16 5096
12	8. 7	58. 8	1. 0	3. 1	5. 4	7. 5	c	53 3. 16	304 20 " "	III C	50. 100	18 52 49. 37	16 46 15. 33	16 5100
13	9. 1	36. 1	38. 5	40. 4	44. 8	46. 4	c_3 d_2	53 36. 17	303 54 10. 0 12. 0	V C	47. 110	18 53 22. 42	17 13 14. 81	17 5401
14	8. 1	50. 2	52. 3	54. 5	56. 6	58. 8	c	54 54. 48	303 52 10. 0 12. 1	III	49. 705	18 54 40. 71	17 7 57. 28	17 5410
15	8. 6	20. 7	22. 9	25. 0	27. 4	29. 4	c	56 25. 08	303 52 " "	III B	43. 600	18 56 11. 31	17 13 7. 22	17 5423
16	8. 7	8. 1	10. 3	12. 4	14. 7	16. 8	c	57 12. 46	303 52 " "	III	47. 030	18 56 58. 68	17 8 47. 85	17 5431
17	8. 8	31. 0	33. 1	35. 3	37. 5	39. 7	c	59 35. 32	304 16 10. 0 11. 8	III C	48. 260	18 59 21. 49	—16 50 48. 72	—16 5135

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ' " "	r	h m s	° ' "	
18	7.5	2.1	4.2	6.4	8.7	10.8	c	0 6.44	304 16 10.0 11.8	III A 43.410	18 59 52.59	−16 42 40.09	−16 5139
19	7.7	12.7	14.9	17.1	19.3	21.5	c	9 17.10	303 30 10.0 11.3	III 45.890	19 9 3.24	17 31 7.18	17 5535
20	8.8	25.9	28.1	30.5	32.6	34.9	c	10 30.40	303 30 " "	III 43.420	19 10 16.53	−17 31 54.16	−17 5543
21	8.0	22.7	24.8	26.6	28.5	30.9	a	11 56.87	303 0 10.0 10.6	I 49.310	19 11 43.04	−18 0 0.83	−18 5290
22	7.5	58.0	0.2	2.3	4.6	6.7	c	12 2.36	303 0 " "	III C 51.020	19 11 48.54	18 5 55.72	18 5291
23	7.8	18.6	20.8	22.9	27.4	28.9	$c_3\ d_2$	12 18.65	303 56 10.0 11.1	V (B) 53.210	19 12 4.75	17 5 59.44	17 5564
24	8.8	25.2	27.3	29.5	31.8	33.9	c	13 29.54	303 56 " "	V 47.510	19 13 15.62	17 4 34.98	17 5578
25	9.2	51.2	53.4	55.4	59.7	1.4	$c_3\ d_2$	13 51.15	303 56 " "	V B 46.270	19 13 37.24	17 8 12.14	17 5579
26	7.0	49.9	52.1	54.3	56.5	58.6	c	17 54.28	303 2 10.0 10.5	III B 44.400	19 17 40.41	18 2 47.95	18 5341
27	8.6	34.9	37.1	39.4	41.5	43.7	c	18 39.32	303 2 " "	III 46.970	19 18 25.44	17 58 45.12	18 5346
28	7.8	41.2	43.2	45.0	47.0	49.3	a	25 15.22	303 36 10.0 11.1	I 47.260	19 25 1.22	17 24 34.09	17 5649
29	8.0	19.2	21.3	23.5	25.7	28.0	c	25 23.54	303 36 " "	III 40.975	19 25 9.56	17 26 36.19	17 5651
30	9.2	1.8	4.0	6.0	8.4	10.5	c	26 6.14	303 36 " "	III C 42.820	19 25 52.15	−17 32 26.72	−17 5657
31	7.8	35.4	37.7	39.7	41.6	43.6	e	26 9.62	303 36 " "	V 41.480	19 25 55.62	−17 26 27.60	−17 5658
32	6.5	45.5	47.8	50.0	52.1	54.2	c	27 49.92	304 12 10.0 11.3	III 44.580	19 27 35.86	16 49 24.53	16 5351
33	9.2	16.4	18.5	20.7	23.0	25.1	c	28 20.74	303 8 10.0 10.4	V 45.420	19 28 6.76	17 53 12.93	17 5669
34	8.0	7.5	9.5	11.3	13.1	15.5	a	33 41.41	303 54 10.0 11.1	I 41.810	19 33 27.32	17 8 15.26	17 5699^1
35	8.0	37.7	39.9	42.0	44.2	46.5	c	33 42.06	303 54 " "	III 42.210	19 33 27.97	17 8 9.13	17 5699^2
36	8.8	42.5	44.6	46.8	49.0	51.1	c	34 46.80	303 54 " "	III 47.510	19 34 32.70	17 6 27.07	17 5706
37	9.0	52.2	54.1	56.0	57.9	0.1	a	42 26.03	304 16 10.0 11.3	I 45.550	19 42 11.84	16 44 59.78	16 5439
38	7.5	24.6	26.8	29.0	31.2	33.3	c	42 28.98	303 20 10.0 11.0	III B 47.820	19 42 14.87	17 43 33.68	17 5750
39	9.1	42.7	45.0	47.0	49.3	51.5	c	43 47.10	303 20 " "	III 47.390	19 43 32.97	17 40 28.28	17 5755
40	8.8	40.6	42.6	44.4	46.4	48.8	a	46 14.65	303 28 10.0 11.4	I A 40.615	19 46 0.49	−17 31 19.91	−17 5768
41	9.1	58.6	0.8	2.6	4.3	6.6	a	46 32.68	303 28 " "	I 46.520	19 46 18.51	−17 32 42.04	−17 5771
42	9.2	30.7	32.8	35.0	37.2	39.4	c	46 35.02	303 28 " "	III C 46.620	19 46 20.86	17 39 7.84	17 5773
43	9.0	6.5	8.7	10.8	12.7	14.5	e	46 40.65	303 28 " "	VII A 45.780	19 46 26.48	17 29 45.18	17 5774
44	8.2	15.4	17.6	19.8	22.0	24.1	c	48 19.78	304 6 10.0 10.9	III 47.870	19 48 5.55	16 54 15.70	17 5785
45	8.9	21.1	23.3	25.5	27.7	29.9	c	49 25.50	303 42 10.0 10.6	III 46.440	19 49 11.30	17 18 44.07	17 5791
46	9.0	2.1	4.3	6.6	8.8	11.0	c	50 6.56	303 12 10.0 11.3	III 44.490	19 49 52.39	17 49 22.33	17 5795
47	8.9	11.2	13.4	15.6	17.8	20.0	c	51 15.60	303 0 10.0 11.1	III 47.200	19 51 1.43	18 0 30.63	18 5537
48	8.6	45.6	47.9	49.9	51.9	53.7	e	51 19.90	304 8 10.0 11.4	V 46.060	19 51 5.64	16 52 50.59	16 5461
49	9.1	24.9	27.0	29.1	31.0	32.9	e	51 59.01	303 40 10.0 11.5	VII 45.490	19 51 44.78	17 21 3.67	17 5804
50	9.2	59.1	1.1	3.3	5.6	7.8	c	54 3.38	303 8 10.0 10.6	III 43.310	19 53 49.17	−17 53 44.38	−18 5557
51	9.0	10.6	12.7	14.6	16.4	18.9	a	55 44.62	304 10 10.0 11.2	I 47.140	19 55 30.32	−16 50 25.73	−16 5481
52	9.3	30.7	32.9	35.0	37.2	39.5	c	55 35.06	303 18 10.0 11.5	V A 41.980	19 55 20.82	17 40 54.68	17 5827
53	7.8	17.1	19.3	21.5	23.8	25.9	c	56 21.52	303 18 " "	III C 45.130	19 56 7.29	17 49 34.06	17 5835
54	8.0	31.9.	34.0	36.1	38.4	40.6	c	57 36.20	303 24 10.0 11.1	III 43.690	19 57 21.94	17 37 35.07	17 5839
55	8.8	7.9	10.0	12.3	14.4	16.5	c	58 12.22	304 4 10.0 11.1	III B 40.870	19 57 57.91	17 1 40.51	17 5841
56	9.1	28.3	30.5	32.7	36.8	38.5	$c_3\ d_2$	58 28.29	304 4 " "	V A 42.300	19 58 13.97	16 54 45.81	17 5843
57	9.2	18.3	20.6	22.5	24.4	26.3	e	58 52.38	303 16 10.0 11.9	VII 46.790	19 58 38.12	17 44 37.66	17 5847
58	8.7	27.3	29.5	31.8	33.9	36.2	c	8 31.74	304 4 10.0 12.0	III 41.620	20 8 17.34	16 58 9.54	17 5906
59	9.1	48.6	50.7	53.0	55.2	57.3	c	8 52.96	304 4 " "	III A 42.380	20 8 38.56	16 54 39.47	17 5909
60	8.8	22.1	24.3	26.5	28.6	30.9	c	9 26.48	304 4 " "	III C 45.860	20 9 12.08	−17 3 14.09	−17 5910
61	9.2	52.2	54.4	56.5	58.7	0.9	c	12 56.54	303 12 10.0 11.3	III B 44.370	20 12 42.16	−17 52 31.58	−18 5644
62	8.0	40.7	42.9	44.8	46.5	49.0	a	14 14.92	303 12 " "	I 48.120	20 14 0.53	17 48 4.43	17 5936
63	9.0	5.0	7.1	9.0	10.9	13.3	a	14 39.20	303 12 " "	I 46.200	20 14 24.80	17 48 41.19	17 5939
64	8.0	54.2	56.4	58.3	0.2	2.5	a	15 28.35	303 58 10.0 11.6	I C 47.430	20 15 13.90	17 8 41.46	17 5947
65	8.9	28.8	30.9	33.1	35.4	37.5	c	15 33.14	303 58 " "	V 52.415	20 15 18.68	17 0 42.30	17 5949
66	9.0	41.2	43.3	45.4	47.6	49.7	c	16 45.44	303 58 " "	III B 46.470	20 16 30.98	17 5 47.99	17 5954
67	8.5	7.5	9.7	11.8	16.0	17.8	$c_3\ d_2$	17 7.49	304 10 10.0 12.2	V 47.110	20 16 53.00	16 50 22.84	16 5581
68	9.3	21.8	23.9	26.2	28.4	30.6	c	18 26.18	303 24 10.0 12.5	III 48.770	20 18 11.73	17 35 51.26	17 5961
69	8.4	0.6	2.9	5.1	7.3	9.4	c	19 5.06	303 40 10.0 12.3	III 48.230	20 18 50.58	17 20 0.81	17 5967
70	9.3	53.1	55.2	57.4	59.6	1.8	c	19 57.42	303 22 10.0 10.9	III 45.930	20 19 42.96	−17 38 46.26	−17 5972
71	7.8	0.2	2.4	4.5	6.9	9.0	c	21 4.60	303 22 " "	III (B) 45.130	20 20 50.13	−17 42 14.60	−17 5975
72	8.4	36.6	38.8	41.0	43.2	45.4	c	21 41.00	303 38 10.0 11.4	V B 46.930	20 21 26.50	17 25 40.47	17 5979
73	9.3	. . . . . .	1.1	3.1	7.6	9.1	$c_4\ d_2$	21 58.87	303 38 " "	V 42.840	20 21 44.38	17 23 45.41	17 5982
74	8.0	52.8	55.0	57.2	59.4	1.6	c	22 57.20	303 20 10.0 10.2	III 49.035	20 22 42.71	17 39 46.37	17 5987
75	7.5	27.5	29.7	31.8	34.0	36.3	c	23 31.86	303 20 " "	III C 49.870	20 23 17.37	17 45 56.37	17 5992
76	9.3	3.8	6.0	8.1	10.4	12.7	c	24 8.20	303 20 " "	V B 45.040	20 23 53.70	17 44 17.55	17 5994
77	9.3	53.9	56.1	58.3	0.5	2.8	c	24 58.32	303 20 " "	V B 49.210	20 24 43.81	17 42 57.31	17 6002
78	8.1	40.3	42.5	44.4	46.4	48.1	e	25 14.45	304 10 10.0 10.1	. . . .	20 24 59.89	16 53 3	17 6003
79	7.5	1.9	4.1	6.2	8.6	10.7	c	27 6.30	304 10 " "	III (C) 46.830	20 26 51.73	16 56 50.55	17 6014
80	9.2	43.3	45.4	47.5	49.6	51.8	c	28 47.52	303 26 10.0 11.0	III B 50.620	20 28 32.98	−17 36 27.08	−17 6020
81	9.0	39.7	41.8	43.7	45.5	47.9	a	30 13.82	303 26 " "	I 47.000	20 29 59.26	−17 34 21.39	−17 6029
82	8.4	45.5	47.6	49.9	52.0	54.1	c	30 49.82	303 38 10.0 11.2	III 48.610	20 30 35.24	17 21 51.22	17 6031
83	9.1	22.1	24.2	26.5	28.6	30.7	c	31 26.42	303 38 " "	III 49.450	20 31 11.84	17 21 34.97	17 6034
84	7.0	19.1	21.2	23.6	25.8	27.9	c	32 23.52	303 38 " "	III C 48.730	20 32 8.93	17 28 14.74	17 6039
85	8.5	13.1	15.3	17.6	19.8	21.9	c	33 17.54	303 38 " "	III B 49.115	20 33 2.94	17 24 54.22	17 6045
86	8.0	35.1	37.3	39.4	41.6	43.8	c	33 39.44	304 12 10.0 11.3	V C 47.590	20 33 24.81	16 54 35.85	17 6046
87	9.2	8.9	11.0	13.1	14.9	16.8	e	33 43.05	304 12 " "	VII 47.130	20 33 28.41	16 48 19.81	16 5658
88	9.1	48.6	50.8	53.0	55.2	57.3	c	35 52.98	303 58 10.0 11.4	III 45.060	20 35 38.34	17 2 57.13	17 6058
89	8.9	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . .	. . . .	303 38 10.0 11.1	III B 45.180	20 36 34	17 26 8.95	17 6060
90	9.4	49.2	51.5	53.6	55.8	58.0	c	37 53.62	303 38 " "	III 46.040	20 37 38.98	−17 22 38.91	−17 6064

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
91	9.1	24.6	26.8	29.0	31.1	33.2	c	38 28.94	303 52 10.0 11.0	III 50.140	20 38 14.28	−17 7 19.50	−17 6067
92	9.1	26.1	28.3	30.5	32.7	34.9	c	39 30.50	304 18 10.0 11.3	III 45.620	20 39 15.80	16 42 44.66	16 5686
93	9.0	46.7	48.9	51.0	53.3	55.3	c	40 51.04	303 28 10.0 11.8	III (C) 47.800	20 40 36.38	17 38 30.73	17 6076
94	7.7	6.0	8.3	10.4	12.6	14.8	c	41 10.42	303 28 " "	III 49.450	20 40 55.75	17 31 32.83	17 6081
95	9.3	38.9	41.0	43.0	45.3	47.5	c	41 43.14	303 28 " "	III B 48.080	20 41 28.47	17 35 12.26	17 6083
96	9.1	30.1	32.4	34.6	36.8	39.0	c	42 34.58	304 10 10.0 11.0	III 47.890	20 42 19.86	16 50 0.88	17 6086
97	7.5	46.1	48.3	50.5	52.8	54.8	c	42 50.50	304 10 " "	V B 47.875	20 42 35.78	16 53 15.94	17 6089
98	9.3	36.4	38.6	40.6	42.9	45.0	c	43 40.70	303 42 10.0 10.6	III 44.450	20 43 26.00	17 19 8.16	17 6095
99	9.5	39.1	41.4	43.5	45.5	47.7	c	44 43.44	304 12 10.0 10.8	III C 45.330	20 44 28.71	16 55 15.73	17 6102
100	8.2	39.2	41.4	43.6	45.8	47.9	c	45 43.58	304 12 " "	III 50.190	20 45 28.83	−16 47 16.06	−16 5711
101	9.3	29.4	31.6	33.9	35.9	38.2	c	46 33.80	304 12 " "	III C 51.460	20 46 19.05	−16 53 17.65	−17 6110
102	......	10.6	12.8	14.9	......	19.4	c	56 14.98	304 14 10.0 11.0	V B 46.560	20 56 0.14	16 49 38.05	17 6155
103	......	22.8	24.6	27.2	29.0	31.4	c	57 27.00	304 14 " "	III 47.160	20 57 12.14	16 46 11.45	16 5771
104	9.2	22.6	24.7	26.9	29.1	31.4	c	58 26.94	303 32 10.0 10.5	V C 48.130	20 58 12.11	17 34 22.16	17 6165
105	7.8	25.0	27.2	29.3	31.6	33.8	c	59 29.38	303 32 " "	III C 50.360	20 59 14.54	−17 33 37.99	−17 6167

Reduction Elements. Zone 136.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
September 20.2....	−0.256	−0.223	−0.290	−0.222	−0.189	−0.290
20.4....	−0.188	−0.155				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	μ Sagittarii		2 H. Scuti		Bradley 2329		Bradley 2333		ν Aquarii		ζ Capricorni	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	299 58 11.00		306 24 11.20		309 58 11.50		297 26 10.45		309 14 10.30		298 10 9.85	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	41.240	4 26.00	44.210	5 22.94	45.110	5 39.71	46.620	6 9.42	45.090	5 39.69	46.360	6 3.96
II Red. to Mer.....	.270	0.21	.255	0.15	.120	0.11	.650	0.23	.100	0.12	.370	0.23
VI Inclination	.455		.405		.275		.860		.290		.550	
VII Refraction......	.460	1 33.4	.430	1 13.2	.295	1 4.5	.865	1 43.8	.315	1 6.8	.575	1 41.6

	β Aquarii		γ Capricorni	
	° ′ ″		° ′ ″	
CIRCLE READING.	315 0 10.20		303 54 9.95	
	r	′ ″	r	′ ″
I Microm. Eq.....	44.020	5 19.42	44.720	5 32.92
II Red. to Mer.....	.060	0.06	.790	0.17
VI Inclination	.245		.935	
VII Refraction.......	.245	54.7	.940	1 21.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Ursae Minoris.....	18 6 24.98	5	−2.28	[−27.29]	47 40	....
μ Sagittarii	18 8 0.01	11	−0.61	−27.33	300 1 3.8	21.3
2 H. Scuti	18 23 43.65	11	−0.59	-27.28	306 28 21.1	22.2
Bradley 2329......	18 29 43.04	11	−0.58	−27.27	310 2 46.8	21.0
Bradley 2333......	18 32 38.72	11	−0.62	−27.30	297 30 36.3	22.1
ν Aquarii	21 4 23.99	11	−0.58	−27.19	309 18 43.3	20.6
ζ Capricorni	21 21 12.33	11	−0.62	−27.25	298 14 32.4	20.4
β Aquarii	21 26 33.33	11	−0.56	−27.23	315 4 35.0	19.6
γ Capricorni	21 34 48.22	11	−0.59	−27.22	303 58 21.8	20.6

h 18.392..........*dt*..................... s −27.295

Hourly rate .... + 0.0246

Adopted Equator Point..........321° 6′ 20.98″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
18 10	29.950	87.1	86.1
19 0	29.956	85.2	84.3
20 0	29.960	83.2	82.5
21 5	29.966	81.3	80.4
21 35	29.973	81.7	80.1

Notes.

26. Magnitude carefully estimated.
65. No companion seen.
66. Double, mean observed.
101. Companion, s. p.
102. Clouds.

δ Ursae Minoris. Image steady.

105. Clouds after this.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					D = Z. D. N. to 1895.0				
			303°	304°	305°	306°	307°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	″	″	″	″	″
303	−0.598	18 0	+14.603	+14.496	+14.391	+14.286	+14.182	+7.40	+7.04	+6.69	+6.34	+5.98
304	0.594	18 30	14.390	14.285	14.184	+14.082	+13.982	5.09	4.74	4.38	+4.03	+3.68
305	0.591	19 0	14.151	14.053	13.955	......	......	+2.55	+2.20	+1.86	....	....
306	0.588	19 30	13.888	13.797	13.706	......	......	−0.16	−0.49	−0.81	....	....
307	−0.585	20 0	13.609	13.525	13.444	......	......	2.99	3.31	3.61	....	....
		20 30	13.316	13.242	13.168	......	......	5.93	6.21	6.48	....	....
		21 0	+13.014	+12.952	+12.891	......	......	−8.87	−9.12	−9.37	....	....

APPARENT RIGHT ASCENSION.	R				
	303°	304°	305°	306°	306° 30′
h m	″	″	″	″	″
18 0	83.21	80.15	77.22	74.44	73.10
18 30	83.41	80.33	77.39	74.61	73.26
19 0	83.60	80.52	77.57	.....	.....
19 30	83.73	80.65	77.70	.....	.....
20 0	83.89	80.80	77.84	.....	.....
20 30	84.02	80.93	77.97	.....	.....
21 0	84.22	81.12	78.16	.....	.....

1895 SEPTEMBER 21. ZONE 137. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.4	33.9	36.2	38.3	40.5	42.6	c	21 38.30	305 30 10.0 10.7	III A	38.610	19 21 24.10	−15 30 5.43	−15 5354
2	9.3	7.7	9.9	12.0	14.3	16.5	c	24 12.08	304 40 10.0 11.8	III	45.130	19 23 57.93	16 21 16.42	16 5332
3	9.3	33.6	35.6	37.7	39.7	42.2	c	33 37.76	305 22 10.0 10.6	III B	41.480	19 33 23.48	15 43 35.61	15 5417
4	9.0	4.7	7.0	9.0	11.3	13.6	c	34 9.12	305 22 " "	V A	45.010	19 33 54.82	15 36 0.59	15 5419
5	9.2	24.8	26.8	28.7	30.4	32.8	a	36 58.64	304 32 10.0 11.1	I C	51.060	19 36 44.40	16 33 44.13	16 5412
6	9.4	11.7	14.0	15.9	18.3	20.4	c	37 16.06	304 32	....	....	19 37 1.81	16 27 33	16 5415
7	9.3	42.3	44.5	46.7	48.7	50.4	e	37 16.69	304 32	....	....	19 37 2.44	16 28 33	16 5416
8	8.0	40.9	43.0	45.2	47.4	49.6	c	52 45.22	304 46 10.0 11.1	III	47.980	19 52 30.80	16 14 13.15	16 5469
9	8.7	41.3	43.3	45.6	47.8	50.0	c	53 45.60	304 46 " "	III B	45.520	19 53 31.18	16 18 13.34	16 5473
10	9.3	46.9	48.9	51.3	53.5	55.7	c	55 51.26	305 30 10.0 11.7	III	49.400	19 55 36.75	−15 29 42.88	−15 5532
11	8.9	17.5	19.7	21.8	24.0	26.3	c	57 21.86	304 46 10.0 11.9	III (C)	48.270	19 57 7.41	−16 20 32.00	−16 5487
12	8.8	21.0	23.0	25.0	26.8	29.2	a	58 54.89	304 46 " "	I A	45.300	19 58 40.41	16 11 45.33	16 5490
13	8.8	11.0	13.3	15.4	17.7	19.7	c	59 15.42	304 46 " "	III B	44.830	19 59 0.95	16 18 24.62	16 5495
14	8.6	56.4	58.5	0.6	2.8	5.0	c	1 0.66	305 50 10.0 11.4	V	43.280	20 0 46.08	15 11 39.51	15 5557
15	8.9	25.7	27.6	29.8	32.0	34.2	c	2 29.86	304 48 10.3 12.3	III	48.070	20 2 15.35	16 12 7.83	16 5505
16	9.1	36.1	38.4	40.6	42.8	44.9	c	3 40.56	304 48 " "	III	44.690	20 3 26.04	16 13 12.38	16 5514
17	8.9	11.5	13.8	15.7	18.1	20.2	c	9 15.86	305 8 10.0 11.5	III B	49.200	20 9 1.26	15 54 57.30	16 5536
18	9.0	33.9	36.2	38.3	40.6	42.6	c	9 38.32	305 8 " "	III	46.640	20 9 23.71	15 52 33.08	16 5539
19	7.8	28.4	30.2	32.2	34.0	36.4	a	12 2.12	304 52 10.0 11.2	I	47.980	20 11 47.51	16 8 6.02	16 5550
20	9.3	12.9	15.2	17.5	19.8	21.7	c	12 17.42	304 52 " "	III	47.080	20 12 2.81	−16 8 24.77	−16 5552
21	8.4	28.0	30.2	32.4	34.6	36.8	c	13 32.40	304 52 " "	III	41.630	20 13 17.78	−16 10 9.04	−16 5558
22	9.1	7.5	9.6	11.8	14.0	16.2	c	14 11.82	305 14 10.0 11.6	III	44.000	20 13 57.16	15 47 22.23	15 5617
23	9.1	44.0	46.2	48.3	50.5	52.5	c	14 48.30	305 14 " "	III C	41.030	20 14 33.65	15 54 45.24	16 5565
24	9.2	25.0	27.2	29.2	31.5	33.6	c	15 29.30	305 14 " "	III	43.640	20 15 14.63	15 47 28.80	15 5627
25	8.0	1.5	3.7	5.7	7.8	9.5	e	15 35.92	305 14 " "	V A	42.460	20 15 21.25	15 44 37.56	15 5628
26	9.4	3.8	6.0	8.1	10.2	12.5	c	19 8.12	304 46 10.0 11.2	III B	39.780	20 18 53.46	16 19 56.63	16 5592
27	9.3	47.3	49.5	51.8	54.0	56.0	c	20 51.72	304 46 " "	III B	39.580	20 20 37.04	16 20 0.04	16 5601
28	8.5	29.3	31.6	33.8	36.0	37.9	c	21 33.72	304 46 " "	V	47.780	20 21 19.03	16 14 10.55	16 5604
29	7.5	46.5	48.5	50.4	52.3	54.6	a	23 20.33	304 56 10.0 11.1	I	47.100	20 23 5.61	16 4 19.90	16 5609
30	9.3	35.5	37.7	40.0	42.3	44.1	c	23 39.92	304 42 10.0 10.8	III	49.450	20 23 25.21	−16 17 37.05	−16 5610
31	9.5	39.5	41.8	43.8	46.0	48.2	c	24 43.86	304 26 10.0 11.0	III	48.150	20 24 29.16	−16 34 2.33	−16 5613
32	9.2	58.5	0.6	2.8	5.1	7.0	c	25 2.80	304 26 " "	V B	50.970	20 24 48.10	16 36 22.96	16 5615
33	9.1	47.5	49.6	52.0	54.2	56.3	c	26 51.92	304 38 9.8 10.3	III C	49.200	20 26 37.20	16 28 7.73	16 5628
34	8.8	37.3	39.5	41.4	43.7	45.8	c	27 41.54	304 38 " "	III	48.480	20 27 26.80	16 21 55.18	16 5632
35	9.3	55.5	57.5	59.8	2.0	4.2	c	28 59.80	305 16 10.0 10.1	III	48.960	20 28 45.00	−15 43 44.02	−15 5715

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.		CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0			δ 1900.0			B. D.	
		s	s	s	s	s		m	s	°	′	″	″		r	h	m	s	°	′	″	°	
36	9.0	27.2	29.2	31.3	33.3	35.0	e	29	1.47	305	16	10.0	10.1	V C	49.440	20	28	46.68	−15	50	2.13	−15	5716
37	9.3	57.4	59.7	1.8	4.0	6.1	c	31	1.80	305	10	9.8	9.3	III B	48.980	20	30	47.00	15	52	57.17	16	5646
38	9.2	0.1	2.0	3.9	5.9	8.1	a	32	33.83	305	10	"	"	I	46.670	20	32	19.01	15	50	26.35	15	5734
39	9.1	49.0	51.2	53.0	54.9	57.0	a	33	22.92	304	48	10.0	11.0	I (C)	47.310	20	33	8.12	16	18	40.20	16	5655
40	9.0	26.3	28.6	30.7	32.9	35.0	c	33	30.70	304	48	"	"	V A	42.240	20	33	15.88	−16	10	38.78	−16	5657
41	9.6	21.9	24.0	26.2	30.5	32.3	c_3 d_2	34	21.92	304	30	10.0	10.7	V B	40.635	20	34	7.12	−16	35	39.04	−16	5661
42	6.0	5.9	8.2	10.2	12.5	14.6	c	35	10.28	304	30	"	"	III A	41.750	20	34	55.47	16	28	47.25	16	5663
43	8.8	19.2	21.5	23.6	25.7	27.9	c	37	23.58	304	50	10.0	10.3	III C	49.460	20	37	8.73	16	15	59.64	16	5675
44	9.0	23.4	25.5	27.8	30.0	32.1	c	38	27.76	304	50	"	"	III	47.220	20	38	12.90	16	10	16.20	16	5681
45	7.8	19.2	21.0	23.0	24.9	27.2	a	39	52.94	304	50	"	"	I	49.010	20	39	38.06	16	9	39.99	16	5690
46	9.0	50.8	53.1	55.0	57.4	59.5	c	39	55.16	304	50	"	"	III	51.460	20	39	40.28	16	8	54.51	16	5691
47	8.8	3.8	5.9	8.2	10.4	12.6	c	41	8.18	303	56	10.0	10.2	III	48.780	20	40	53.35	17	3	48.12	17	6080
48	9.2	25.9	27.9	29.9	32.3	34.4	c	42	30.08	304	22	10.0	10.5	III	49.050	20	42	15.21	16	37	41.32	16	5698
49	7.7	41.3	43.2	45.5	47.6	49.8	c	42	45.48	304	22	"	"	V B	43.040	20	42	30.61	16	42	51.39	16	5702
50	9.3	57.6	59.7	2.0	4.3	6.4	c	44	2.00	305	24	10.0	10.5	III	44.970	20	43	47.05	−15	36	56.55	−15	5803
51	9.4	28.4	30.4	32.4	34.8	36.9	c	45	32.58	305	24	"	"	III B	46.180	20	45	17.62	−15	39	46.27	−15	5812
52	9.0	43.2	45.3	47.2	49.7	51.7	c	45	47.42	305	24	"	"	V	41.220	20	45	32.45	15	38	9.47	15	5814
53	8.3	54.4	56.6	58.2	0.0	2.4	a	47	28.26	304	28	9.0	9.1	I	46.550	20	47	13.34	16	32	27.58	16	5718
54	8.9	36.1	38.4	40.6	42.8	44.9	c	47	40.56	304	46	10.0	10.1	V	45.830	20	47	25.61	16	14	42.43	16	5719
55	8.0	32.5	34.8	36.8	39.0	41.1	c	49	36.84	305	20	10.0	10.5	III	48.630	20	49	21.84	15	39	45.25	15	5833
56	8.8	36.3	38.4	40.5	42.7	45.0	c	50	40.58	305	20	"	"	III	44.230	20	50	25.57	15	41	9.46	15	5838
57	8.8	46.8	48.9	51.0	53.3	55.4	c	52	51.08	303	56	10.0	10.0	III	45.610	20	52	36.14	17	4	46.51	17	6135
58	9.2	24.6	26.5	28.4	30.4	32.7	a	54	58.42	304	50	10.0	11.0	I C	43.370	20	54	43.41	16	17	50.91	16	5758
59	9.0	59.5	1.6	3.8	6.1	8.1	c	55	3.82	304	50	"	"	III A	40.940	20	54	48.80	16	8	57.35	16	5759
60	8.8	22.1	24.3	26.3	28.6	30.6	c	55	26.38	304	50	"	"	V B	47.350	20	55	11.36	−16	13	24.46	−16	5764
61	9.5	33.9	36.1	37.8	39.8	42.0	a	57	7.75	305	12	10.0	10.3	I	46.050	20	56	52.68	−15	48	32.09	−15	5867
62	7.8	11.3	13.5	15.6	17.8	19.9	c	57	15.62	305	12	"	"	III B	45.470	20	57	0.55	15	51	57.98	16	5769
63	8.6	56.6	58.6	0.9	3.0	5.2	c	59	0.86	304	12	10.0	10.4	III	43.230	20	58	45.83	16	49	29.97	16	5778
64	.....	40.2	42.4	44.5	46.7	48.9	c	59	44.54	304	24	10.0	10.2	III	45.310	20	59	29.49	16	36	49.45	16	5785
65	9.0	30.0	32.2	34.4	36.6	38.7	c	1	34.38	304	42	10.0	10.8	III	48.710	21	1	19.30	16	17	42.73	16	5794
66	7.5	45.6	47.8	49.9	52.1	54.2	c	1	49.92	304	42	"	"	V B	44.080	21	1	34.84	16	22	26.34	16	5797
67	9.1	58.7	1.0	3.0	5.3	7.4	c	3	3.08	305	16	10.0	10.5	III	45.450	21	2	47.95	15	44	43.63	15	5896
68	9.0	46.6	48.8	51.0	53.3	55.5	c	3	51.04	304	(32)	10.0	10.9	V C	49.780	21	3	35.95	16	33	49.44	16	5804
69	8.4	59.5	1.8	3.8	6.0	8.2	c	6	3.86	304	(32)	"	"	V A	43.760	21	5	48.74	16	26	3.33	16	5816
70	9.1	34.0	35.9	37.6	39.5	42.0	a	10	7.72	304	36	10.0	10.4	I	48.050	21	9	52.56	−16	23	52.59	−16	5826
71	8.6	12.5	14.7	16.7	18.9	21.0	c	10	16.76	304	36	"	"	III C	48.000	21	10	1.61	−16	30	21.23	−16	5827
72	9.5	52.6	54.8	57.0	59.1	1.4	c	11	56.98	304	40	10.0	10.9	III B	46.570	21	11	41.80	16	23	35.03	16	5831
73	8.5	29.7	31.9	34.0	36.2	38.4	c	12	34.04	304	40	"	"	III A	42.070	21	12	18.85	16	18	32.61	16	5833
74	9.5	27.2	29.6	31.6	34.0	36.0	c	14	31.68	305	10	10.0	10.4	III	47.690	21	14	16.45	15	49	58.68	16	5843
75	8.6	57.0	59.0	0.8	2.7	5.0	a	16	30.82	304	36	10.0	10.9	I	47.220	21	16	15.60	16	24	7.04	16	5849
76	8.6	57.0	59.1	1.2	3.5	5.6	c	17	1.28	305	44	10.0	11.1	III B	42.790	21	16	46.00	15	20	43.69	15	5963
77	9.1	51.6	53.8	56.0	58.1	0.3	c	17	55.96	305	44	"	"	III A	40.290	21	17	40.66	15	15	2.84	15	5972
78	9.0	59.5	1.6	3.8	5.9	8.2	c	19	3.80	304	36	10.0	10.3	III B	40.640	21	18	48.56	16	29	27.95	16	5856
79	9.3	35.8	38.0	40.3	42.5	44.7	c	19	40.26	304	36	"	"	III	45.680	21	19	25.01	16	24	37.84	16	5859
80	7.8	7.6	9.8	11.9	14.2	16.3	c	21	11.96	305	20	10.0	10.2	III	45.440	21	20	56.65	−15	40	40.24	−15	5983
81	9.4	42.0	44.2	46.3	48.6	50.6	c	22	46.34	304	26	10.0	10.5	III C	46.820	21	22	31.06	−16	40	41.89	−16	5866
82	9.2	16.2	18.4	20.5	22.7	24.8	c	23	20.52	304	26	"	"	III	44.060	21	23	5.23	16	35	8.60	16	5868
83	9.1	37.3	39.5	41.6	43.9	46.2	c	23	41.70	304	26	"	"	V A	45.790	21	23	26.41	16	31	21.46	16	5871
84	8.6	38.0	40.3	42.4	44.5	46.8	c	24	42.40	305	24	10.4	11.2	III	48.610	21	24	27.05	15	35	37.34	15	5995
85	9.2	40.7	42.9	45.0	47.2	51.5	c_2 d_1	25	42.88	304	42	10.0	10.2	V	48.760	21	25	27.56	16	17	38.76	16	5878
86	9.2	5.8	7.9	10.0	12.3	14.5	c	27	10.10	305	20	10.0	10.1	III	49.500	21	26	54.73	15	39	21.33	15	6004
87	9.4	43.9	46.0	48.2	50.4	52.6	c	27	48.22	305	20	"	"	III C	50.240	21	27	32.85	15	45	33.19	15	6006
88	9.1	29.1	31.0	33.0	34.7	37.0	a	30	2.80	305	4	10.0	10.5	I	47.970	21	29	47.42	15	55	49.16	16	5890
89	8.3	33.7	35.7	37.9	40.2	42.4	c	30	37.98	304	52	10.0	10.3	III	45.890	21	30	22.60	16	8	31.14	16	5892
90	8.7	38.2	40.3	42.5	44.7	46.9	c	31	42.52	305	10	10.0	10.5	III	45.160	21	31	27.12	−15	50	44.09	−16	5895
91	8.8	15.5	17.6	19.7	21.8	24.0	c	33	19.72	305	4	10.0	10.9	III C	45.975	21	33	4.31	−16	2	54.39	16	5903
92	8.6	41.8	44.0	46.1	48.4	50.5	c	33	46.16	305	4	"	"	III A	43.580	21	33	30.74	15	53	58.75	16	5905
93	9.0	8.8	10.9	13.0	15.3	17.4	c	35	13.08	305	4	"	"	III A	40.740	21	34	57.65	15	54	53.00	16	5913
94	8.0	15.0	17.0	19.2	21.5	23.5	c	37	19.24	304	48	10.0	10.3	III	44.310	21	37	3.80	16	13	0.55	16	5924
95	9.2	29.9	31.8	33.9	35.7	38.0	a	39	3.79	304	34	9.5	9.5	I B	41.920	21	38	48.35	16	30	58.95	16	5932
96	7.5	0.2	2.5	4.7	6.9	9.0	c	39	4.66	304	34	"	"	III	48.380	21	38	49.22	16	25	43.47	16	5933
97	9.0	46.8	49.0	51.0	53.4	55.5	c	39	51.14	304	56	10.7	10.8	III	48.960	21	39	35.67	16	3	29.93	16	5938
98	8.8	59.2	1.4	3.7	5.8	7.9	c	41	3.60	304	32	10.0	10.1	III	49.630	21	40	48.14	16	27	18.71	16	5942
99	.....	42.5	44.7	46.8	49.0	51.2	c	41	46.84	304	32	"	"	III C	46.170	21	41	31.38	16	34	51.15	16	5943
100	9.0	33.9	36.1	38.2	40.4	42.5	c	42	38.22	304	32	"	"	V B	43.650	21	42	22.75	−16	32	28.02	−16	5946
101	8.8	51.9	54.0	55.9	57.6	0.1	a	47	25.81	304	44	10.0	10.1	I	45.760	21	47	10.27	−16	16	29.93	−16	5963
102	9.1	55.0	57.2	59.1	0.8	3.0	a	48	29.02	304	0	10.0	9.5	I	49.660	21	48	13.50	16	59	17.26	17	6399
103	8.0	44.7	46.9	49.0	51.2	53.4	c	49	49.04	305	14	10.0	10.3	III A	44.040	21	49	33.45	15	43	47.33	15	6092
104	9.3	46.0	48.0	49.9	51.9	54.2	a	51	19.90	304	44	10.3	10.9	I B	45.530	21	51	4.33	16	19	46.32	16	5974
105	9.4	27.4	29.6	31.6	33.9	36.1	c	51	31.72	304	44	"	"	III	45.370	21	51	16.14	16	16	37.82	16	5976
106	7.7	32.3	34.5	36.6	38.9	41.0	c	52	36.66	305	24	10.3	10.8	III	47.490	21	52	21.05	15	35	55.25	15	6103
107	8.9	56.8	59.0	1.0	3.4	5.4	c	53	1.12	305	24	"	"	V A	43.240	21	52	45.50	15	34	2.89	15	6104
108	8.8	34.5	36.6	38.8	40.9	43.0	c	53	38.76	305	24	"	"	III	46.040	21	53	23.13	15	36	22.94	15	6107
109	9.0	52.3	54.7	56.8	58.9	1.0	c	53	56.74	305	24	"	"	V	43.270	21	53	41.11	15	37	17.40	15	6109
110	8.7	33.4	35.5	37.7	39.5	41.4	e	54	7.80	305	24	"	"	V (A)	44.370	21	53	52.17	−15	33	41.06	−15	6111

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
111	7.6	47.8	49.8	51.7	53.6	56.0	a	56 21.65	304 54 10.0 10.5	I	48.610	21 56 6.02	−16 5 33.32	−16 5998
112	8.8	38.0	40.0	42.2	44.3	46.6	c	56 42.22	305 8 10.0 10.3	III	44.850	21 56 26.58	15 52 46.48	16 6001
113	8.5	43.8	46.0	48.2	50.3	52.5	c	0 48.16	304 32 10.0 10.4	III	44.020	22 0 32.50	16 29 3.45	16 6019
114	8.6	37.7	39.7	42.0	44.2	46.4	c	2 42.00	304 32 “ “	III	42.880	22 2 26.33	16 29 25.08	16 6027
115	9.0	35.4	37.5	39.7	42.0	44.0	c	4 39.72	305 28 10.0 10.0	III B	42.290	22 4 24.00	15 36 47.10	15 6152
116	9.0	59.7	1.7	3.9	6.2	8.3	c	5 3.96	305 28 “ “	III A	44.790	22 4 48.23	15 29 30.45	15 6156
117	9.2	52.3	54.3	56.3	58.1	0.5	a	7 26.13	305 12 10.0 10.7	I	47.000	22 7 10.39	15 48 1.95	16 6040
118	8.9	52.2	54.3	56.5	58.8	1.0	c	7 56.56	303 54 10.0 10.8	III	44.350	22 7 40.86	17 6 57.80	17 6463
119	9.2	9.7	12.0	14.0	16.5	18.5	c	9 14.14	303 54 “ “	III	46.580	22 8 58.42	17 6 14.88	17 6468
120	9.3	50.7	53.0	55.2	57.4	59.5	c	10 55.16	304 32 10.0 10.1	III	45.020	22 10 39.40	−16 28 43.18	−16 6050
121	8.9	39.2	41.3	43.2	45.1	47.5	a	12 13.18	304 32 “ “	I B	43.990	22 11 57.41	−16 32 14.35	−16 6056
122	8.0	13.7	15.9	18.0	20.3	22.5	c	12 18.08	304 32 “ “	III	44.950	22 12 2.30	16 28 44.38	16 6057
123	9.1	34.9	37.0	39.0	41.2	43.5	c	12 39.12	304 32 “ “	V A	43.590	22 12 23.34	16 25 56.55	16 6058
124	9.3	56.5	58.6	0.8	3.0	5.3	c	15 0.84	305 12 10.0 11.0	III	49.880	22 14 45.02	15 47 7.19	16 6065
125	9.0	41.0	43.2	45.0	46.9	49.0	a	17 14.87	305 6 10.0 10.7	I (B)	46.370	22 16 59.03	15 57 26.29	16 6069
126	9.2	22.0	24.2	26.3	28.5	30.7	c	17 26.34	305 6 “ “	III	49.360	22 17 10.50	15 53 17.35	16 6071
127	9.0	26.2	28.2	30.2	32.5	34.7	c	18 30.36	305 2 9.5 9.6	III C	44.230	22 18 14.52	16 5 22.82	16 6076
128	9.3	6.2	8.3	10.5	12.7	14.8	c	19 10.50	305 2 “ “	III A	43.510	22 18 54.65	15 55 55.03	16 6077
129	8.6	19.9	22.0	24.0	26.4	28.5	c	20 24.16	304 54 10.0 10.6	III	45.865	22 20 8.30	16 6 24.71	16 6081.
130	8.0	3.3	5.4	7.4	9.4	11.0	e	20 37.56	305 8 10.0 10.3	VII	47.620	22 20 21.69	−15 51 53.01	−16 6082
131	9.1	26.0	28.2	30.3	32.5	34.7	c	23 30.34	304 50 10.0 10.2	III	45.330	22 23 14.46	−16 10 35.05	−16 6088
132	8.2	46.8	49.0	51.0	53.3	55.4	c	24 51.10	304 6 10.0 10.6	III B	42.550	22 24 35.22	16 58 43.62	17 6536
133	7.8	14.7	16.9	19.0	21.3	23.5	c	25 19.08	304 6 “ “	III A	44.530	22 25 3.20	16 51 36.72	17 6537
134	9.3	48.9	51.0	53.0	55.5	57.6	c	31 53.20	304 46 10.0 10.1	III	45.690	22 31 37.24	16 14 27.65	16 6114
135	9.2	19.3	21.4	23.5	25.8	28.0	c	32 23.60	304 18 10.0 10.8	V	47.530	22 32 7.64	16 41 54.61	16 6118
136	9.1	59.7	1.8	3.9	6.0	8.1	c	33 3.90	305 16 10.0 10.5	V	43.370	22 32 47.91	15 45 11.86	15 6252
137	8.5	58.6	0.8	2.9	5.2	7.3	c	35 2.96	304 32 10.0 10.6	III	44.790	22 34 46.97	16 28 45.10	16 6125
138	8.7	30.4	32.6	34.7	36.9	38.9	c	36 34.70	304 50 10.0 10.4	III	51.730	22 36 18.69	16 8 31.04	16 6134
139	9.1	46.2	48.4	50.7	52.8	55.0	c	36 50.62	304 50 “ “	V	46.110	22 36 34.61	16 10 20.21	16 6135
140	8.4	40.0	42.1	44.0	45.7	48.1	a	42 13.94	304 20 10.0 10.5	I	46.140	22 41 57.89	−16 40 17.73	−16 6152
141	8.9	25.0	26.9	29.1	31.5	33.6	c	42 29.22	305 20 10.0 10.5	III	48.260	22 42 13.15	−15 39 35.83	−15 6274
142	9.2	58.3	0.6	2.7	5.0	7.1	c	43 2.74	304 48 10.0 10.5	V B	45.500	22 42 46.67	16 15 45.02	16 6155
143	9.2	1.7	3.9	6.0	8.2	10.4	c	44 6.04	304 48 “ “	III	43.980	22 43 49.97	16 12 59.31	16 6158
144	9.3	0.6	2.7	4.8	7.0	9.0	c	46 4.82	305 0 10.0 10.2	III	44.620	22 45 48.72	16 0 46.51	16 6161
145	9.2	46.7	48.9	51.0	53.0	55.3	c	48 50.98	304 38 10.0 10.5	V	43.970	22 48 34.87	16 23 1.05	16 6171
146	.....	32.4	34.6	36.7	38.9	41.0	c	49 36.72	304 38 “ “	III A	39.520	22 49 20.60	16 21 9.68	16 6173
147	9.2	55.0	57.2	59.5	1.6	3.7	c	50 59.40	305 48 10.0 10.3	III	47.480	22 50 43.25	15 11 49.15	15 6303
148	8.9	4.4	6.6	8.7	11.0	13.0	c	53 8.74	304 34 10.0 10.8	III	45.770	22 52 52.59	16 26 24.97	16 6184
149	9.0	29.8	32.0	34.1	36.3	38.5	c	54 34.14	304 22 10.0 10.6	III	45.040	22 54 17.98	16 38 39.58	16 6188
150	9.2	53.2	55.2	57.2	59.0	1.2	a	56 26.98	305 12 10.0 10.6	I A	46.820	22 56 10.78	−15 44 45.92	−15 6326
151	9.0	26.3	28.4	30.6	32.8	35.0	c	56 30.62	305 12 “ “	III C	46.700	22 56 14.42	−15 54 31.50	−16 6193
152	9.1	42.3	44.5	46.1	48.0	50.4	a	59 16.20	304 28 10.0 10.7	I	44.190	22 58 59.99	−16 32 53.83	−16 6201

Reduction Elements. Zone 137.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
September 21.3....	−0.080	−0.255	−0.268	−0.036	−0.206	−0.268
21.5....	+0.009	−0.156				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		d Sagittarii		*υ* Sagittarii		*f* Sagittarii		51 Aquilae		*υ* Aquarii		*g* Aquarii	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	301 54 10.90		304 54 10.75		301 2 10.40		310 0 10.90		299 48 9.20		301 40 10.20	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	43.815	5 15.54	41.150	4 23.85	42.815	4 56.50	44.840	5 34.94	43.980	5 19.00	43.645	5 12.27
II	Red. to Mer......	.880	0.19	.160	0.16	.880	0.20	.895	0.11	44.080	0.21	.710	0.19
VI	Inclination	44.020		.330		43.030		45.020		.200		.810	
VII	Refraction	.040	1 26.8	.335	1 17.5	.060	1 29.8	.050	1 4.5	.220	1 35.3	.910	1 28.5

		λ Aquarii		*h* Aquarii	
		° ′ ″		° ′ ″	
	CIRCLE READING.	312 54 10.25		312 46 10.05	
		r	′ ″	r	′ ″
I	Microm. Eq......	43.770	5 14.31	45.960	5 56.81
II	Red. to Mer......	.800	0.08	46.055	0.08
VI	Inclination	.940		.150	
VII	Refraction	.990	58.9	.200	59.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
d Sagittarii	19 12 0.74	11	-0.39	−27.45	301 57 59.8	23.8
υ Sagittarii	19 16 14.01	11	−0.39	−27.46	304 57 17.3	24.3
λ Ursae Minoris	19 27 51.07	6	+2.10	[−27.55]	50 2	....
f Sagittarii	19 40 45.85	11	−0.40	−27.65	301 5 37.3	24.9
51 Aquilae	19 45 31.58	11	−0.38	−27.67	310 4 41.5	24.7
υ Aquarii	22 29 29.21	11	−0.40	−27.60	299 51 53.1	22.2
g Aquarii	22 38 28.38	11	−0.40	−27.63	301 43 54.2	23.8
λ Aquarii	22 47 40.15	11	−0.38	−27.71	312 58 25.7	23.4
h Aquarii	23 0 13.14	11	−0.38	−27.62	312 51 7.8	24.4

h 19.478	*dt*	s −27.558
	Hourly rate	− 0.0252
	Adopted Equator Point	° ′ ″ 321 6 23.94

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 5	29.994	86.8	85.8
20 0	29.994	85.4	85.0
21 0	29.990	81.7	80.3
21 58	29.990	81.0	79.3
23 0	29.990	81.7	80.0

Notes.

f Sagittarii. Images somewhat unsteady.

16. Images quite unsteady.

20. Very close double, mean observed.

47. Close double, mean observed.

υ Aquarii. Star images diffuse.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			$D =$ Z. D. N. to 1895.0			R		
			304°	305°	306°	304°	305°	306°	304°	305°	306°
°	s	h m	s	s	s	″	″	″	″	″	″
304	−0.391	19 0	+14.072	+13.974	+13.878	+ 2.19	+ 1.85	+ 1.51	80.33	77.39	74.61
305	0.389	19 30	13.816	13.724	13.634	− 0.50	− 0.83	− 1.15	80.43	77.48	74.70
306	−0.387	20 0	13.542	13.460	13.379	3.29	3.60	3.91	80.50	77.55	74.76
		20 30	13.256	13.184	13.112	6.19	6.47	6.76	80.85	77.89	75.09
		21 0	12.964	12.902	12.840	9.10	9.35	9.62	81.21	78.24	75.42
		21 30	12.668	12.620	12.571	11.98	12.21	12.44	81.28	78.31	75.49
		22 0	12.377	12.341	12.303	14.79	14.99	15.18	81.36	78.38	75.56
		22 30	12.094	12.070	12.046	17.50	17.65	17.81	81.30	78.32	75.51
		23 0	+11.821	+11.812	+11.801	−20.02	−20.14	−20.25	81.25	78.27	75.46

1895 SEPTEMBER 23. ZONE 138. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	s
1	9.3	42.5	44.5	46.5	48.3	50.5	a	37 16.39	304 34 10.7 11.6	I	43.950	19 37 1.73	−16 27 32.46	−16 5415
2	9.1	12.6	14.9	17.0	19.2	21.3	c	37 17.00	304 34 " "	V	40.990	19 37 2.34	16 28 32.15	16 5416
3	9.0	20.9	23.2	25.3	27.6	29.7	c	59 25.34	304 26 10.0 9.6	III	45.210	19 59 10.48	16 35 5.20	16 5496
4	9.6	52.7	54.8	56.9	59.1	1.3	c	5 56.96	306 26 9.1 9.8	V	48.860	20 5 41.89	14 33 50.04	14 5663
5	8.5	37.2	39.2	41.0	43.0	45.3	a	9 10.94	305 22 10.0 9.5	I	47.500	20 8 55.92	15 38 14.64	15 5592
6	8.8	14.5	16.7	18.9	21.0	23.3	c	9 18.88	305 22 " "	III	44.120	20 9 3.86	15 39 21.02	15 5593
7	8.6	36.3	38.4	40.6	42.8	44.8	c	11 40.58	305 12 10.0 9.4	III	42.350	20 11 25.55	15 49 54.81	15 5607
8	8.9	53.7	56.0	58.0	0.1	2.4	c	13 58.04	305 40 10.0 10.6	III B	47.905	20 13 42.96	15 23 19.09	15 5616
9	8.5	25.9	28.0	30.3	32.4	34.5	c	14 30.22	305 40 " "	III	48.880	20 14 15.13	15 19 46.98	15 5619
10	8.6	39.2	41.4	43.5	45.7	47.8	c	15 43.52	306 48 10.0 10.7	III	46.440	20 15 28.33	−14 12 30.73	−14 5719
11	8.2	45.1	47.3	49.4	51.7	53.8	c	16 49.46	305 4 10.0 10.1	III	46.440	20 16 34.39	−15 56 34.93	−16 5575
12	9.1	10.0	12.2	14.2	16.5	18.7	c	17 14.32	305 4 " "	III	43.410	20 16 59.24	15 57 32.97	16 5582
13	9.4	14.9	17.0	19.1	21.3	23.6	c	19 19.18	303 6 10.0 9.6	III	48.750	20 19 4.23	17 53 55.48	18 5671
14	9.2	33.0	35.2	37.4	39.5	41.6	c	20 37.34	305 20 10.0 9.7	III B	41.350	20 20 22.22	15 45 24.42	15 5660
15	9.3	13.8	16.1	18.2	20.4	22.6	c	21 18.22	305 20 " "	III A	40.940	20 21 3.08	15 39 3.47	15 5669
16	7.8	39.4	41.6	43.6	45.8	48.0	c	22 43.68	306 42 10.0 10.0	III	42.900	20 22 28.44	14 19 37.40	14 5753
17	9.2	53.8	55.8	57.8	0.1	2.3	c	25 57.96	305 52 10.0 9.0	III	49.975	20 25 42.75	15 7 23.32	15 5697
18	9.4	53.0	55.2	57.4	59.5	1.5	c	26 57.32	305 28 10.0 10.5	III B	45.300	20 26 42.14	15 36 6.26	15 5701
19	9.0	55.6	57.8	0.0	2.4	4.3	c	28 0.02	305 28 " "	III	43.410	20 27 44.82	15 33 29.02	15 5708
20	8.0	1.7	3.7	5.8	8.0	10.2	c	29 5.88	305 46 10.0 10.0	III	50.275	20 28 50.65	−15 13 16.53	−15 5717
21	8.9	54.6	56.8	58.9	1.1	3.3	c	31 58.94	304 38 10.0 10.1	III	46.230	20 31 43.76	−16 22 36.27	−16 5649
22	5.5	51.8	53.9	56.0	58.4	0.4	c	33 56.10	305 44 10.0 11.1	III B	50.660	20 33 40.83	15 18 20.74	15 5743
23	8.9	8.3	10.4	12.5	14.8	16.9	c	34 12.58	305 44 " "	V B	46.800	20 33 57.31	15 19 36.29	15 5746
24	9.2	53.9	55.7	57.6	59.5	1.8	a	35 27.45	305 44 " "	I	47.060	20 35 12.16	15 16 14.69	15 5754
25	9.0	43.3	45.4	47.6	49.7	51.7	c	35 47.54	305 30 10.0 9.4	III	47.190	20 35 32.26	15 30 15.04	15 5756
26	8.9	44.6	46.8	48.9	51.0	53.3	c	36 48.92	303 34 10.0 9.1	III	47.820	20 36 33.76	17 26 7.96	17 6060
27	9.0	32.8	35.2	37.2	39.4	41.6	c	38 37.24	305 40 10.0 10.1	III	46.900	20 38 21.93	15 20 19.17	15 5769
28	8.9	0.3	2.4	4.6	6.7	8.8	c	39 4.56	305 40 " "	III B	44.365	20 38 49.24	15 24 20.99	15 5772
29	8.8	21.2	23.4	25.5	27.7	29.7	c	39 25.50	305 40 " "	V	50.190	20 39 10.18	15 19 17.20	15 5775
30	8.0	58.7	0.9	3.0	5.3	7.4	c	40 3.06	305 40 " "	III B	45.880	20 39 47.74	−15 23 51.67	−15 5780

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
31	9.3	47.3	49.5	51.7	53.8	56.0	c	40 51.66	306 2 10.0 9.6	III C 44.280	20 40 36.31	−15 5 34.41	−15 5785
32	9.2	44.8	47.0	49.2	51.3	53.5	c	41 49.16	306 2 " "	III A 44.265	20 41 33.79	14 55 52.97	15 5790
33	9.3	15.0	17.0	19.3	21.3	23.5	c	42 19.22	306 2 " "	III B 45.180	20 42 3.85	15 2 3.93	15 5793
34	8.1	2.7	5.5	7.0	11.1	13.4	b_1 c_2	45 15.54	305 8 10.0 10.0	I 44.710	20 45 0.19	15 52 59.49	16 5709
35	9.2	38.6	40.7	42.8	45.0	47.2	c	45 42.86	305 34 10.0 10.0	V 45.480	20 45 27.48	15 26 46.40	15 5813
36	8.8	29.1	31.3	33.4	35.6	37.8	c	47 33.44	303 44 10.0 10.0	III C 46.645	20 47 18.17	17 22 53.28	17 6112
37	8.8	14.7	16.9	19.1	21.4	23.5	c	48 19.12	303 44 " "	III 49.100	20 48 3.84	17 15 39.82	17 6114
38	9.2	21.8	23.9	25.8	27.7	30.0	a	49 55.83	304 4 10.0 10.3	I 47.855	20 49 40.51	16 56 0.75	17 6123
39	9.3	55.4	57.6	59.7	1.8	4.0	c	49 59.70	304 4 " "	III C 46.500	20 49 44.39	17 2 54.43	17 6125
40	9.1	46.7	48.9	51.0	53.2	55.4	c	51 51.04	304 34 10.0 10.1	III C 44.850	20 51 35.68	−16 33 24.48	−16 5739
41	6.0	15.6	17.8	19.9	22.3	24.4	c	52 20.00	304 34 " "	III A 40.890	20 52 4.62	−16 24 58.84	−16 5741
42	9.0	11.6	13.8	16.0	18.1	20.2	c	54 15.94	303 10 10.0 10.4	III 43.970	20 54 0.64	17 51 18.36	18 5821
43	7.0	25.1	27.2	29.4	31.7	33.9	c	55 29.46	303 10 " "	III B 41.690	20 55 14.15	17 55 15.15	18 5831
44	8.7	56.0	58.3	0.3	2.6	4.7	c	57 0.38	303 18 10.0 9.7	III 47.410	20 56 45.04	17 42 11.71	17 6158
45	9.3	27.3	29.3	31.4	33.8	35.9	c	58 31.54	303 18 " "	III B 45.115	20 58 16.19	17 46 8.72	17 6166
46	9.2	9.5	11.6	13.8	16.1	18.2	c	0 13.84	303 34 10.0 9.3	III 48.780	20 59 58.45	17 25 44.21	17 6170
47	9.2	55.0	57.0	59.4	1.6	3.8	c	0 59.36	303 46 10.0 9.4	III 47.820	21 0 43.95	17 14 1.88	17 6175
48	8.7	4.9	7.1	9.3	11.5	13.5	c	3 9.26	305 42 10.0 9.5	III 46.250	21 2 53.72	15 18 26.43	15 5897
49	8.4	35.0	37.3	39.3	41.6	43.7	c	6 39.38	306 54 10.0, 9.3	III 44.940	21 6 23.74	14 6 48.04	14 5954
50	8.9	56.3	58.5	0.6	2.8	4.8	c	8 0.60	306 54 " "	III 48.080	21 7 44.94	−14 5 47.52	−14 5963
51	9.0	42.8	45.0	47.1	49.2	51.5	c	8 47.12	306 54 " "	III 47.010	21 8 31.46	−14 6 7.88	−14 5970
52	8.6	11.0	13.2	15.4	17.5	19.7	c	9 15.36	306 28 10.0 10.1	V 42.510	21 8 59.72	14 33 36.14	14 5973
53	9.0	52.4	54.5	56.9	58.8	3.0	c_2 d_1	9 54.54	304 50 10.0 9.5	V 50.565	21 9 38.97	16 9 5.81	16 5824
54	9.0	28.6	30.6	32.7	35.0	37.2	c	11 32.82	305 30 10.0 9.3	III 44.710	21 11 17.20	15 30 54.89	15 5939
55	9.4	43.0	45.2	47.4	49.5	51.6	c	16 47.34	304 52 10.0 9.7	III 46.540	21 16 31.71	16 8 20.22	16 5852
56	9.4	34.7	37.0	39.2	41.4	43.5	c	17 39.16	305 16 10.0 9.4	III 46.300	21 17 23.50	15 44 23.77	15 5967
57	8.9	48.1	50.2	52.3	54.6	56.7	c	18 52.38	305 16 " "	III 46.130	21 18 36.72	15 44 26.80	15 5977
58	8.1	22.5	24.6	26.7	29.0	31.2	c	21 26.80	303 18 10.0 9.5	III 47.440	21 21 11.21	17 42 6.50	17 6270
59	8.0	14.7	16.6	18.7	20.5	22.8	a	22 48.25	306 52 10.0 10.2	I 47.600	21 22 32.47	14 7 52.02	14 6031
60	9.0	18.3	20.3	22.0	23.8	26.2	a	23 51.73	306 52 " "	I C 48.500	21 23 35.94	−14 14 0.86	−14 6038
61	6.8	53.7	55.8	57.6	59.5	1.8	a	24 27.32	306 30 10.0 10.5	I A 44.115	21 24 11.54	−14 27 43.81	−14 6039
62	9.3	......	49.7	51.5	53.4	55.7	a	25 21.25	306 30 " "	I C 49.120	21 25 5.47	14 35 49.44	14 6045
63	9.1	20.0	22.1	24.2	26.4	28.6	c	25 24.26	306 30 " "	III C 46.710	21 25 8.48	14 36 37.03	14 6046
64	9.1	35.9	38.1	39.9	41.8	44.0	a	27 9.82	304 52 10.0 9.9	I 44.000	21 26 54.09	16 9 5.46	16 5881
65	9.4	39.8	41.9	43.8	45.6	48.0	a	28 13.75	304 28 10.0 9.5	I A 45.320	21 27 58.03	16 29 25.69	16 5884
66	7.5	20.2	22.3	24.5	26.6	28.8	c	28 24.48	304 28 " "	III C 47.500	21 28 8.76	16 38 27.05	16 5885
67	9.0	16.0	18.2	20.4	22.6	24.7	c	29 20.38	305 56 10.0 9.7	III 46.090	21 29 4.59	15 4 23.89	15 6012
68	9.5	56.0	58.0	0.1	2.3	4.6	c	30 0.20	305 56 " "	III 51.600	21 29 44.40	15 2 38.06	15 6014
69	7.8	56.5	58.7	0.8	3.0	5.3	c	33 0.86	305 38 10.0 9.7	III 48.440	21 32 45.04	15 21 38.93	15 6027
70	9.4	30.0	32.0	34.2	36.3	38.5	c	34 34.20	304 32 10.0 9.0	III 49.185	21 34 18.41	−16 27 27.60	−16 5909
71	9.1	20.0	22.0	24.3	26.6	28.7	c	35 24.32	306 10 10.0 10.1	III 47.160	21 35 8.46	−14 50 1.56	−15 6033
72	9.2	59.5	1.5	3.3	5.0	7.5	a	36 33.02	306 22 10.0 9.8	I 44.340	21 36 17.14	14 38 53.64	14 6103
73	......	50.1	52.3	54.3	56.5	58.6	c	36 54.36	305 56 10.0 9.4	III 45.540	21 36 38.50	15 4 33.36	15 6040
74	6.0	48.7	50.7	52.9	55.0	57.2	c	37 52.90	306 8 10.0 9.2	III 49.010	21 37 37.02	14 51 26.20	15 6046
75	9.5	27.7	29.9	31.9	34.0	36.3	c	39 31.96	305 10 10.0 9.4	III 47.790	21 39 16.10	15 49 51.71	16 5936
76	9.1	3.0	5.2	6.9	8.7	11.0	a	40 36.51	307 12 10.0 9.6	I 46.800	21 40 20.56	13 48 3.91	14 6121
77	9.1	53.6	55.7	57.7	0.0	2.2	c	40 57.84	306 6 10.0 9.0	III 46.630	21 40 41.93	14 54 11.60	15 6061
78	8.5	54.7	56.8	59.0	1.1	3.3	c	41 58.98	306 6 " "	III B 43.030	21 41 43.07	14 58 33.78	15 6065
79	9.1	19.2	21.4	23.5	25.8	27.9	c	43 23.56	305 24 10.0 9.6	III C 43.350	21 43 7.66	15 43 41.77	15 6072
80	8.9	56.5	58.6	0.9	3.0	5.3	c	44 0.86	305 24 " "	III A 39.820	21 43 44.94	−15 35 7.91	−15 6075
81	7.0	54.4	56.6	58.9	1.0	3.3	c	44 58.84	303 42 10.0 9.4	III 45.430	21 44 42.99	−17 18 40.17	−17 6389
82	9.0	21.0	23.0	25.2	27.5	29.5	c	46 25.24	307 2 10.0 9.5	III 47.650	21 46 9.24	13 57 48.67	14 6144
83	5.0	33.0	34.9	36.7	38.7	41.0	a	48 6.44	307 2 " "	I B 46.510	21 47 50.43	14 1 21.83	14 6149
84	9.1	57.6	59.7	1.5	3.5	5.8	a	48 31.41	305 26 10.0 9.1	I 47.525	21 48 15.46	15 33 53.39	15 6087
85	9.2	35.9	38.0	40.2	42.5	44.7	c	48 40.26	305 6 10.0 9.4	III 47.860	21 48 24.31	15 53 49.19	16 5967
86	9.7	50.0	52.1	54.0	55.9	58.2	a	50 23.89	305 0 10.0 9.3	I A 40.180	21 50 7.93	15 58 59.56	16 5971
87	9.1	27.5	29.6	31.8	33.9	35.9	c	50 31.74	305 0 " "	III C 41.730	21 50 15.79	16 8 13.05	16 5972
88	9.2	27.6	29.2	33.5	35.6	37.7	b_2 c_3	51 37.76	305 0 " "	III B 40.310	21 51 21.79	16 5 27.26	16 5978
89	8.6	11.7	13.8	15.8	17.8	19.7	e	51 46.30	307 10 10.0 9.2	V 48.675	21 51 30.25	13 49 29.39	14 6169
90	9.4	1.3	3.6	5.6	7.9	10.1	c	54 5.70	303 40 10.0 9.5	III 48.680	21 53 49.76	−17 19 36.60	−17 6411
91	8.2	24.8	27.0	29.0	31.3	33.2	c	55 29.06	306 22 10.0 9.3	III 45.120	21 55 13.01	−14 38 37.66	−14 6187
92	9.1	56.0	58.1	0.2	2.5	4.7	c	56 0.30	306 22 " "	III B 50.170	21 55 44.25	14 40 13.94	14 6190
93	8.0	39.8	41.9	43.8	45.6	48.1	a	57 13.92	303 34 10.0 9.0	I 44.820	21 56 57.95	17 26 49.28	17 6422[1]
94	8.0	10.0	12.2	14.4	16.5	18.6	c	57 14.34	303 34 " "	III 45.060	21 56 58.37	17 26 46.19	17 6422[2]
95	9.2	30.9	33.0	35.0	37.5	39.5	c	58 35.18	304 36 10.0 9.5	III 48.030	21 58 19.16	16 23 45.92	16 6009
96	9.0	16.2	18.2	20.3	22.6	24.8	c	1 20.42	306 26 10.0 9.1	III 45.640	22 1 4.34	14 34 26.87	14 6210
97	9.4	22.3	24.4	26.2	28.0	30.5	a	2 56.31	303 56 10.0 10.0	I C 46.490	22 2 40.28	17 10 41.34	17 6449
98	7.8	41.2	43.5	45.1	47.0	49.5	a	3 15.27	303 56 " "	I A 43.500	22 2 59.23	17 1 56.78	17 6451
99	9.2	16.7	19.0	21.0	23.2	25.6	c	3 21.10	303 56 " "	III 40.860	22 3 5.06	17 6 4.51	17 6454
100	9.3	33.3	35.4	37.7	39.9	41.8	c	4 37.64	307 22 10.0 9.4	III 48.950	22 4 21.47	−13 37 20.51	−13 6116
101	9.4	43.9	46.0	48.0	50.4	52.8	c	5 48.22	304 18 10.0 10.3	III 47.510	22 5 32.14	−16 41 55.43	−16 6037
102	9.4	35.7	37.7	39.6	41.4	43.7	a	8 9.55	304 34 10.0 9.7	I 43.900	22 7 53.44	−16 27 2.50	−16 6043

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
103	8.9	25.5	27.5	29.3	31.2	33.5	a	8 59.36	304 20 10.0 10.6	I	44.520	22 8 43.25	−16 40 50.66	−16 6044
104	6.5	55.7	57.5	59.4	1.4	3.7	a	9 29.44	304 48 10.0 10.4	I (C)	47.665	22 9 13.31	16 18 15.43	16 6046
105	8.6	31.3	33.7	35.8	38.0	40.2	c	9 35.80	304 48 " "	III	47.755	22 9 19.67	16 11 48.89	16 6047
106	9.2	40.0	42.2	44.3	46.5	48.7	c	10 44.34	307 16 10.0 9.5	III	46.360	22 10 28.13	13 44 9.70	13 6145
107	8.8	36.9	38.9	41.2	43.3	45.4	c	11 41.14	304 8 10.0 9.6	III	44.250	22 11 25.01	16 52 58.17	17 6480
108	8.8	49.5	51.5	53.4	55.2	57.5	a	13 23.20	305 30 10.0 9.2	I	44.420	22 13 7.02	15 30 49.69	15 6188
109	9.5	45.3	47.3	49.4	51.6	54.0	c	13 49.52	304 8 10.0 9.5	III	47.950	22 13 33.37	16 51 46.98	17 6487
110	8.9	19.2	21.2	23.5	25.7	27.9	c	15 23.50	306 2 10.0 9.0	III C	50.300	22 15 7.29	−15 3 23.06	−15 6196
111	8.0	23.0	25.0	27.2	29.4	31.6	c	16 27.24	306 2 " "	III	48.250	22 16 11.02	−14 57 36.14	−15 6200
112	8.7	19.2	21.4	23.7	25.7	27.7	c	17 23.54	304 38 10.0 9.4	III	49.570	22 17 7.34	16 21 14.21	16 6070
113	8.7	21.6	23.7	25.9	28.1	30.1	c	18 25.88	304 38 " "	III (C)	47.690	22 18 9.68	16 28 16.39	16 6075
114	6.0	17.5	19.7	21.8	24.2	26.3	c	19 21.90	306 58 10.0 9.6	VI	46.320	22 19 5.63	14 2 12.20	14 6276
115	7.7	50.3	52.3	54.2	56.3	58.5	a	21 24.37	303 50 10.0 9.8	I (B)	41.650	22 21 8.16	17 14 59.42	17 6520
116	7.5	20.5	22.6	24.9	27.0	29.2	c	21 24.84	303 50 " "	III B	41.470	22 21 8.63	17 15 4.62	17 6521
117	9.4	43.5	45.5	47.8	50.0	52.1	c	21 47.78	303 50 " "	V A	43.060	22 21 31.56	17 8 6.91	17 6525
118	9.3	1.1	3.0	5.0	6.8	9.2	a	23 34.98	304 20 10.0 9.9	I	41.975	22 23 18.73	16 41 38.44	16 6090
119	9.2	42.1	44.2	46.5	48.7	50.9	c	23 46.48	304 20 " "	III	47.950	22 23 30.23	16 39 45.26	16 6092
120	9.3	10.5	12.7	14.9	17.0	19.1	c	26 14.84	306 58 10.0 10.4	III	45.960	22 25 58.51	−14 2 16.10	−14 6297
121	8.6	1.3	3.5	5.6	7.8	9.9	c	27 5.62	306 58 " "	III B	42.480	22 26 49.28	−14 6 36.09	−14 6301
122	9.3	36.8	39.0	41.0	42.9	44.7	e	27 10.90	303 38 10.0 10.9	VII	46.170	22 26 54.64	17 22 23.14	17 6546
123	9.3	12.0	14.0	16.2	18.5	20.7	c	31 16.28	303 46 10.0 10.4	III A	48.840	22 30 59.97	17 10 13.57	17 6556
124	8.7	32.7	34.8	37.0	39.2	41.3	c	31 37.00	303 46 " "	V C	50.540	22 31 20.69	17 19 23.68	17 6560
125	9.3	20.0	22.1	24.2	26.6	28.7	c	32 24.32	303 46 " "	V C	45.710	22 32 8.00	17 20 56.31	17 6563
126	8.6	1.0	3.3	5.4	7.5	9.6	c	35 5.36	305 12 10.0 10.0	III	49.030	22 34 49.00	15 47 21.27	16 6127
127	8.5	43.9	46.0	48.0	50.0	51.8	e	38 18.12	304 38 10.0 10.1	VII B	47.170	22 38 1.73	16 25 14.37	16 6140
128	9.2	30.7	32.9	34.9	37.2	39.4	c	39 35.02	304 38 " "	V C	48.385	22 39 18.62	16 28 2.18	16 6146
129	9.3	34.4	36.5	38.6	40.6	42.4	e	40 8.61	304 16 10.0 10.2	VII C	51.570	22 39 52.21	16 49 2.96	17 6583
130	8.2	51.5	53.7	55.8	58.1	0.3	c	41 55.88	304 2 10.0 9.6	III	52.670	22 41 39.47	−16 56 14.38	−17 6591
131	9.1	51.5	53.6	55.7	57.8	0.1	c	42 55.74	304 2 " "	III C	45.940	22 42 39.32	−17 4 49.68	−17 6593
132	8.2	20.6	22.2	26.5	28.7	31.0	b_2 c_3	43 30.88	303 14 10.0 9.6	III	44.160	22 43 14.47	17 46 59.98	18 6196
133	9.3	23.2	25.5	27.4	31.9	33.5	c_3 d_2	46 23.24	304 24 10.0 9.9	VI C	53.210	22 46 6.78	16 40 30.42	16 6162
134	9.2	21.9	24.0	26.0	28.4	30.5	c	47 26.16	304 24 " "	V	53.640	22 47 9.69	16 33 55.62	16 6165^1
135	9.2	52.9	55.0	57.0	59.0	0.8	e	47 27.09	304 24 " "	VII	54.460	22 47 10.62	16 33 41.01	16 6165^2
136	8.9	31.6	33.6	35.9	38.2	40.3	c	48 35.92	304 12 10.0 9.5	V	52.380	22 48 19.44	16 46 20.49	17 6617
137	6.0	40.3	42.3	44.5	46.8	48.9	c	49 44.56	304 12 " "	III	46.760	22 49 28.07	16 48 6.95	17 6619
138	8.6	5.3	7.5	9.7	11.8	13.9	c	51 9.64	306 54 10.0 10.0	III	48.950	22 50 53.11	14 5 17.40	14 6370
139	9.4	59.0	1.3	3.5	5.5	7.8	c	54 3.42	303 34 10.0 9.3	III	48.220	22 53 46.90	17 25 40.68	17 6637
140	9.3	49.6	51.7	53.9	56.2	58.3	c	56 53.94	303 56 10.0 9.4	III	45.050	22 56 37.39	−17 4 40.29	−17 6648
141	8.9	50.3	52.5	54.6	56.8	59.0	c	57 54.64	303 8 10.0 10.0	III	48.700	22 57 38.09	−17 51 32.28	−18 6243
142	9.2	34.3	36.4	38.4	40.7	42.8	c	1 38.52	305 34 10.0 9.4	III A	41.870	23 1 21.92	15 24 21.24	15 6346
143	9.1	9.7	11.8	13.9	15.8	17.6	e	1 44.07	305 34 " "	V B	42.840	23 1 27.46	15 30 32.82	15 6348
144	9.0	11.5	13.4	15.6	17.8	20.0	c	3 15.66	303 24 10.0 10.1	III	47.600	23 2 59.06	−17 35 52.39	−17 6681

Reduction Elements. Zone 138.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
September 23.3....	−0.029	−0.253	−0.276	−0.008	−0.189	−0.276
23.5....	+0.014	−0.125				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		h Sagittarii		*f* Sagittarii		51 Aquilae		63 Sagittarii		*υ* Aquarii		*τ* Aquarii	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		295 56 10.25		301 2 10.00		310 0 10.25		307 6 10.10		299 48 9.30		306 52 10.00	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	43.360	5 7.10	42.825	4 56.42	44.850	5 34.44	45.550	5 48.54	44.040	5 19.27	49.050	6 55.73
II	Red. to Mer......	.425	0.25	.885	0.20	.850	0.11	.590	0.14	.030	0.21	.125	0.14
VI	Inclination......	.580		43.025		.975		.740		.235		.230	
VII	Refraction.......	.630	1 50.4	.035	1 29.6	45.025	1 4.4	.760	1 11.5	.230	1 35.2	.250	1 12.8

		h Aquarii		*c*^{2} Aquarii	
		° ′ ″		° ′ ″	
CIRCLE READING.		312 46 9.90		299 18 10.00	
		r	′ ″	r	′ ″
I	Microm. Eq......	45.965	5 56.04		5 36.36
II	Red. to Mer......	.960	0.08	44.950	0.19
VI	Inclination......	46.150		45.065	−0.67
VII	Refraction.......	.130	59.2	.060	1 37.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
λ Ursae Minoris	19 27 46.41	6	−4.63	[−28.04]	50 2	....
h Sagittarii	19 30 51.05	11	−0.37	−27.97	295 59 27.2	23.6
f Sagittarii	19 40 46.18	11	−0.36	−28.04	301 5 37.0	24.6
51 Aquilae	19 45 31.90	11	−0.35	−28.05	310 4 40.4	23.5
63 Sagittarii	19 56 37.58	11	−0.35	−28.08	307 10 47.3	23.4
υ Aquarii	22 29 29.55	11	−0.37	−28.21	299 51 53.6	22.8
τ Aquarii	22 44 34.31	11	−0.35	−28.00	306 57 53.1	22.3
h Aquarii	23 0 13.46	11	−0.34	−27.98	312 51 6.8	23.4
c^2 Aquarii	23 4 23.42	11	−0.37	−27.97	299 22 8.6	21.4

h		s
19.722	*dt*	−28.035
	Hourly rate	−0.0016
		° ′ ″
	Adopted Equator Point	321 6 23.12

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 17	29.890	87.4	86.3
20 0	29.900	85.4	83.8
21 0	29.898	83.6	81.5
21 58	29.896	81.2	79.6
23 6	29.900	79.3	77.9

Notes.

93. Blue.
94. Yellow.

Images during this zone unsteady and diffuse.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
303	−0.359
304	0.358
305	0.356
306	0.354
307	0.352
308	−0.350

APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
	303°	304°	305°	306°	307°	308°
h m	s	s	s	s	s	s
19 30	+13.934	+13.844	+13.751	......	......	......
20 0	13.651	13.567	13.487	+13.404	+13.322	......
20 30	13.353	13.279	13.207	13.136	13.062	......
21 0	13.045	12.983	12.920	12.859	12.797	+12.737
21 30	12.734	12.683	12.634	12.584	12.535	12.485
22 0	12.423	12.387	12.349	12.313	12.276	12.239
22 30	12.120	12.097	12.073	12.050	12.025	+12.002
23 0	11.827	11.818	11.809	11.799	+11.789	......
23 30	+11.553	+11.558	+11.563	+11.567	......	......

APPARENT RIGHT ASCENSION.	*D* = Z. D. N. to 1895.0						*R*					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
19 30	−0.20	−0.53	−0.86	.....	....	.....	83.20	80.13	77.20	74.42	71.76	70.48
20 0	3.00	3.32	3.63	−3.95	−4.26	.....	83.50	80.43	77.48	74.70	72.03	70.74
20 30	5.89	6.18	6.48	6.76	7.05	.....	83.68	80.59	77.64	74.85	72.18	70.89
21 0	8.81	9.07	9.34	9.61	9.86	−10.13	83.85	80.76	77.80	75.01	72.33	71.04
21 30	11.71	11.94	12.18	12.42	12.65	12.88	84.02	80.93	77.96	75.16	72.48	71.19
22 0	14.54	14.75	14.95	15.16	15.35	15.54	84.18	81.08	78.11	75.30	72.61	71.32
22 30	17.28	17.44	17.60	17.77	17.92	−18.09	84.31	81.21	78.24	75.42	72.73	71.43
23 0	19.81	19.93	20.06	20.18	−20.31	.....	84.43	81.32	78.34	75.53	72.83	71.53
23 30	−22.15	−22.25	−22.33	−22.42	.....	.....	84.55	81.43	78.45	75.63	72.93	71.63

1895 SEPTEMBER 27. ZONE 139. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.3	54.8	56.9	59.0	1.2	3.3	c	20 59.04	306 50 10.0	8.3	III	43.590	20 20 42.54	−14 11 22.36	−14 5741
2	9.3	52.9	55.1	57.2	59.3	1.5	c	26 57.20	306 12 10.0	8.5	III	48.610	20 26 40.68	14 47 45.98	14 5769
3	9.0	54.6	56.7	58.8	1.0	3.2	c	28 58.86	306 2 10.0	8.0	III	50.580	20 28 42.33	14 57 8.34	15 5714
4	9.3	36.0	38.2	40.2	42.3	44.5	c	29 40.24	306 2 “	“	III C	46.720	20 29 23.71	15 4 48.39	15 5718
5	9.0	47.5	49.7	51.3	53.1	55.5	a	34 21.01	306 56 10.0	8.5	I	47.240	20 34 4.38	14 4 7.15	14 5810
6	7.8	45.1	47.3	49.5	51.5	53.8	c	34 49.44	306 38 10.0	8.6	III	47.950	20 34 32.81	14 21 55.57	14 5812
7	9.1	33.4	35.5	37.5	39.8	41.9	c	35 37.62	306 22 10.0	8.4	III	47.690	20 35 21.01	14 38 1.15	14 5814
8	9.3	29.9	31.7	33.6	35.5	37.6	a	43 3.22	307 6 10.0	7.9	I A	45.395	20 42 46.49	13 51 24.83	14 5852
9	8.4	46.0	48.1	49.9	51.8	54.1	a	43 19.54	307 6 “	“	I	45.550	20 43 2.81	13 54 37.36	14 5855
10	9.1	24.8	26.9	29.0	31.2	33.4	c	43 29.06	307 6 “	“	III	45.140	20 43 12.33	−13 54 46.69	−14 5856
11	8.5	36.7	38.9	41.0	43.0	45.3	c	44 40.98	307 6 “	“	III C	46.430	20 44 24.25	−14 0 47.78	−14 5861
12	9.2	42.5	44.6	46.8	49.0	51.0	c	47 46.78	306 26 10.0	7.8	III B	42.910	20 47 30.05	14 38 43.43	14 5873
13	9.0	58.8	0.9	3.0	5.3	7.3	c	49 3.06	306 26 “	“	III A	40.490	20 48 46.32	14 33 0.96	14 5880
14	9.1	54.0	56.2	58.3	0.5	2.6	c	51 58.32	305 40 10.0	8.3	III	48.460	20 51 41.59	−15 19 44.45	−15 5842

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
15	8.6	9.1	11.3	13.4	15.5	17.7	c	54 13.40	305 48 10.0	7.5	III	49.925	20 53 56.64	−15 11 15.89	−15 5852
16	9.3	46.9	48.9	51.0	53.3	55.4	c	54 51.10	305 48 "	"	III B	44.655	20 54 34.34	15 16 10.16	15 5856
17	8.6	1.3	3.5	5.6	9.6	11.4	$c_3 d_2$	55 1.28	306 40 10.0	8.1	VI	50.140	20 54 44.47	14 19 11.08	14 5906
18	8.3	53.1	55.2	57.4	59.6	1.8	c	57 57.42	305 46 10.0	7.1	III	48.970	20 57 40.62	15 13 33.70	15 5872
19	8.8	15.6	17.8	19.8	21.9	24.2	c	3 19.86	306 50 10.0	7.0	III B	43.780	21 3 2.95	14 14 22.81	14 5942
20	9.0	6.3	8.5	10.5	12.7	15.0	c	4 10.60	306 50 "	"	III	44.220	21 3 53.68	−14 11 0.93	−14 5945
21	8.6	45.5	47.7	49.9	52.0	54.2	c	4 49.86	306 20 10.0	8.0	III	45.750	21 4 32.97	−14 40 32.18	−14 5949
22	9.3	53.5	55.7	57.4	59.4	1.5	a	9 27.24	305 52 10.0	7.5	I B	43 170	21 9 10.32	15 12 33.64	15 5926
23	9.1	32.2	34.5	36.6	38.9	41.0	c	9 36.64	305 52 "	"	III B	44.055	21 9 19.72	15 12 18.47	15 5928
24	9.0	4.8	7.0	9.3	11.4	13.5	c	10 9.20	305 52 "	"	III	47.000	21 9 52.28	15 8 8.57	15 5931
25	8.0	17.2	19.5	21.5	23.7	25.9	c	11 21.56	305 52 "	"	III C	47.530	21 11 4.63	15 14 24.31	15 5938
26	7.0	57.8	59.9	2.0	4.2	6.3	c	12 2.04	307 20 10.0	7.0	III	41.600	21 11 45.03	13 41 48.43	13 5897
27	9.0	16.0	18.4	20.5	22.5	24.8	c	14 20.44	306 12 10.0	7.6	III	46.465	21 14 3.46	14 48 17.11	15 5949
28	8.5	57.4	59.6	1.8	4.0	6.0	c	20 1.76	307 6 10.0	7.7	III	42.670	21 19 44.69	13 55 26.57	14 6019
29	9.3	3.3	5.5	7.5	9.8	11.8	c	21 7.58	307 6 "	"	III C	47.690	21 20 50.51	14 0 16.18	14 6024
30	7.8	8.0	10.0	12.2	14.4	16.5	c	22 12.22	307 6 "	"	III C	44.520	21 21 55.14	−14 1 16.82	−14 6026
31	9.0	26.4	28.5	30.7	32.8	35.0	c	22 30.68	307 6 "	"	V B	39.160	21 22 13.60	−13 59 48.29	−14 6029
32	9.0	9.6	11.7	13.8	15.6	17.5	e	22 44.17	307 6 "	"	VII A	43.250	21 22 27.08	13 52 2.42	14 6030
33	8.9	45.2	47.3	49.0	50.9	53.3	a	25 18.84	306 8 10.0	8.4	I	47.500	21 25 1.76	14 51 53.46	15 5997
34	9.2	0.1	2.0	3.9	5.8	8.2	a	26 33.57	307 6 10.0	7.9	I B	49.500	21 26 16.45	13 56 25.78	14 6051
35	9.0	55.4	57.4	59.2	1.0	3.4	a	27 28.84	307 6 "	"	I	50.980	21 27 11.70	13 52 44.14	14 6058
36	9.1	32.8	35.0	37.3	39.3	41.4	c	27 37.16	307 6 "	"	III	46.885	21 27 20.02	13 54 4.22	14 6059
37	9.4	51.7	53.9	55.9	58.2	0.2	c	27 55.98	307 6 "	"	III B	41.050	21 27 38.85	13 59 9.40	14 6062
38	......	19.9	22.0	24.1	26.3	28.5	c	28 24.16	307 6 "	"	V	48.480	21 28 7.02	13 53 34.82	14 6063
39	9.3	0.9	3.2	5.3	7.0	8.8	e	28 35.56	307 6 "	"	V B	45.700	21 28 18.42	13 57 41.58	14 6066
40	7.8	32.0	34.2	36.2	38.1	40.0	e	29 6.63	307 6 "	"	VII	41.900	21 28 49.48	−13 55 42.13	−14 6070
41	9.3	17.0	19.2	21.0	22.9	24.8	e	29 51.53	307 18 10.0	8.0	V	44.060	21 29 34.36	−13 42 58.85	−13 5968
42	9.0	29.9	31.9	34.0	36.1	38.2	c	31 34.02	307 6 10.0	8.4	III	45.880	21 31 16.84	13 54 22.60	14 6080
43	9.2	53.1	55.4	57.4	59.5	1.8	c	32 57.44	307 20 10.0	7.5	V	(46).835	21 32 40.23	13 40 5.23	13 5980
44	8.2	31.3	33.3	35.3	37.2	39.2	e	33 5.78	307 2 10.0	7.9	VII	44.110	21 32 48.59	13 58 59.22	14 6088
45	9.3	36.9	38.9	40.8	42.7	45.0	a	36 10.49	306 36 10.0	8.2	I	48.955	21 35 53.28	14 23 22.65	14 6101
46	6.	19.7	21.7	23.9	26.0	28.1	c	36 23.88	306 36 "	"	III C	49.740	21 36 6.67	14 29 35.22	14 6102
47	9.3	45.6	47.6	49.8	52.0	54.3	c	37 49.86	306 52 10.0	8.5	III	48.060	21 37 32.62	14 7 40.25	14 6110
48	9.3	47.5	49.6	51.6	53.9	56.0	c	38 51.72	306 34 10.0	8.5	III A	41.610	21 38 34.49	14 24 29.24	14 6113
49	9.2	32.3	34.5	36.6	38.8	40.9	c	39 36.62	306 34 "	"	III A	39.435	21 39 19.38	14 25 10.85	14 6114
50	8.9	5.4	7.5	9.5	11.8	13.8	c	40 9.60	306 52 10.0	8.5	V A	36.440	21 39 52.34	−14 8 9.00	−14 6116
51	9.0	45.3	47.3	49.4	51.4	53.0	e	40 19.78	306 52 "	"	VII A	42.960	21 40 2.52	−14 6 5.19	−14 6119
52	9.3	59.9	2.1	4.0	6.3	8.5	c	42 4.16	307 2 10.0	8.0	III	47.210	21 41 46.89	13 57 55.73	14 6125
53	9.1	19.5	21.7	23.7	26.0	28.3	c	43 23.84	306 22 10.0	8.2	III	47.810	21 43 6.58	14 37 45.57	14 6128
54	9.1	40.0	42.0	44.1	46.3	48.5	c	43 44.18	306 54 10.0	8.1	V C	49.980	21 43 26.89	14 11 29.90	14 6131
55	8.9	14.5	16.5	18.7	20.8	22.9	c	44 18.68	306 54 "	"	V A	44.525	21 44 1.38	14 3 33.33	14 6133
56	9.1	39.7	41.9	44.0	46.2	48.4	c	46 44.04	306 36 10.0	8.5	III	47.430	21 46 26.74	14 23 51.65	14 6145
57	9.0	36.0	38.1	40.3	42.4	44.6	c	47 40.28	306 36 "	"	III	48.000	21 47 22.97	14 23 40.59	14 6148
58	9.4	42.6	44.7	46.9	49.0	51.2	c	48 46.88	306 36 "	"	III	44.580	21 48 29.56	14 24 46.06	14 6153
59	9.0	15.3	17.6	19.7	21.8	23.8	c	51 19.64	306 56 10.0	7.9	III	46.075	21 51 2.28	14 4 16.46	14 6166
60	9.1	11.7	13.7	16.0	18.0	20.2	c	52 15.92	306 38 10.0	8.4	III	49.050	21 51 58.56	−14 21 19.75	−14 6173
61	9.1	41.2	43.3	45.4	47.6	49.7	c	52 45.44	306 38 "	"	III	46.530	21 52 28.08	−14 22 8.03	−14 6176
62	7.0	18.8	21.0	23.0	25.3	27.3	c	53 23.08	307 20 10.0	8.3	III B	45.260	21 53 5.70	13 43 43.88	13 6064
63	9.4	40.0	42.1	44.1	46.4	48.5	c	53 44.22	307 20 "	"	V	44.805	21 53 26.83	13 40 40.65	13 6065
64	9.0	26.9	29.0	31.2	33.6	35.6	c	54 31.26	307 6 10.0	8.4	V	45.415	21 54 13.88	13 54 29.35	14 6181
65	8.0	26.9	29.0	31.2	33.4	35.6	c	55 31.22	306 44 10.0	8.0	III A	44.470	21 55 13.83	14 13 31.77	14 6188
66	9.3	58.0	0.4	2.3	4.5	6.6	c	56 2.36	306 44 "	"	III B	40.540	21 55 44.97	14 21 15.75	14 6191
67	9.3	56.6	58.7	0.8	2.9	5.2	c	57 0.84	305 32 10.0	8.0	III	48.590	21 56 43.47	15 27 30.99	15 6121
68	8.2	10.7	12.8	14.9	17.3	19.4	c	58 15.02	305 32 "	"	III A	42.880	21 57 57.64	15 26 6.54	15 6129
69	9.3	10.5	12.9	14.9	17.2	19.2	c	59 14.94	306 28 10.0	7.6	III	44.330	21 58 57.53	14 32 50.20	14 6203
70	9.4	20.5	22.8	24.8	27.0	29.0	c	0 24.82	306 44 10.0	9.0	III	48.910	22 0 7.39	−14 15 20.78	−14 6205
71	6.0	15.2	17.6	19.6	21.8	23.9	c	1 19.62	306 44 "	"	III C	50.470	22 1 2.18	−14 21 16.90	−14 6209
72	9.1	42.2	44.4	46.6	48.6	50.8	c	2 46.52	306 56 10.0	8.2	III	45.990	22 2 29.06	14 4 16.43	14 6214
73	7.9	37.0	39.4	41.4	43.5	45.5	c	3 41.36	307 12 10.0	8.6	III	48.750	22 3 23.88	13 47 22.49	14 6218
74	9.4	31.7	34.0	36.2	38.3	40.4	c	4 36.12	306 52 10.0	9.1	III A	44.110	22 4 18.64	14 5 36.63	14 6222
75	9.4	26.6	28.9	30.8	33.0	35.3	c	5 30.92	306 52 "	"	III C	44.945	22 5 13.43	14 15 2.01	14 6224
76	9.1	15.4	17.6	19.7	22.0	24.0	c	6 19.74	307 16 10.0	8.6	III	49.730	22 6 2.24	13 43 3.20	13 6124
77	9.2	40.0	42.0	44.3	46.4	48.6	c	7 44.26	307 2 10.0	8.1	III	47.860	22 7 26.75	13 57 39.73	14 6232
78	8.0	15.5	17.7	19.8	22.1	24.2	c	11 19.86	306 26 10.0	8.2	III	51.300	22 11 2.33	14 32 34.79	14 6242
79	8.5	59.7	1.7	3.8	6.0	8.1	c	12 3.86	306 26 "	"	III C	43.630	22 11 46.33	14 41 28.05	14 6245
80	9.3	34.8	37.0	38.8	40.7	42.6	e	12 9.21	306 26 "	"	V B	40.110	22 11 51.68	−14 39 24.23	−14 6247
81	6.8	52.0	54.1	56.3	58.3	0.6	c	13 56.26	307 12 10.0	8.0	III	45.700	22 13 38.69	−13 48 20.11	−14 6255
82	9.2	47.8	49.9	51.9	54.2	56.3	c	15 52.02	306 54 10.0	8.6	III	49.600	22 15 34.44	14 5 5.51	14 6264
83	9.4	31.6	33.6	35.4	37.3	39.6	a	19 5.06	307 16 10.0	8.3	I C	44.240	22 18 47.45	13 51 12.11	14 6274
84	9.2	51.2	52.9	55.0	56.6	58.9	a	19 24.46	307 16 "	"	I A	42.445	[22 19 6.84]	13 42 4.68	13 6177
85	8.0	25.8	27.8	29.9	32.1	34.3	c	19 29.98	307 16 "	"	III A	44.490	22 19 12.36	−13 41 27.09	−13 6178

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B.D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
86	9.4	42.5	44.5	48.6	50.1	52.7	c₄ d₃	19 40.15	307 16 10.0 8.3	VI 49.100	22 19 22.53	−13 43 15.92	−13 6179
87	9.1	33.8	36.0	38.0	40.3	42.5	c	23 38.12	306 46 10.0 9.0	III B 42.125	22 23 20.47	14 18 41.62	14 6288
88	9.1	56.9	59.0	1.0	3.2	5.4	c	24 1.10	306 46 “ “	III A 40.760	22 23 43.45	14 12 39.13	14 6290
89	9.2	24.4	26.5	28.7	30.9	33.0	c	25 28.70	306 40 10.0 9.0	III (B) 48.700	22 25 11.04	14 22 35.55	14 6295
90	9.0	29.0	31.2	33.3	35.5	37.6	c	26 33.32	306 40 “ “	III 48.250	22 26 15.65	−14 19 30.79	−14 6299
91	8.4	6.0	8.1	10.1	12.5	14.6	c	31 10.26	306 26 10.0 7.6	III 49.210	22 30 52.55	−14 33 13.29	−14 6312
92	8.0	6.8	8.9	10.9	13.0	15.2	c	32 10.96	306 48 10.0 8.5	III 49.470	22 31 53.24	14 11 6.83	14 6315
93	8.0	47.7	50.0	52.0	54.2	56.3	c	32 52.04	307 6 10.0 8.5	III 48.645	22 32 34.31	13 53 21.83	14 6317
94	9.2	50.2	52.3	54.4	56.5	58.7	c	35 54.42	306 38 10.0 8.5	III 44.760	22 35 36.67	14 22 37.35	14 6326
95	9.1	17.8	19.8	21.6	23.5	25.7	a	39 51.28	306 56 10.0 8.1	I B 47.020	22 39 33.48	14 7 4.71	14 6336
96	9.0	44.8	47.5	49.1	53.3	......	b₁ c₁	39 57.57	306 56 “ “	II C 48.760	22 39 39.77	14 9 45.26	14 6337
97	9.3	24.0	26.4	28.3	30.3	32.2	e	39 58.74	306 56 “ “	V (B) 44.080	22 39 40.94	14 8 4.38	14 6338
98	9.0	45.6	47.7	49.7	51.6	53.4	e	40 20.11	305 56 “ “	VII 41.250	22 40 2.32	14 5 46.36	14 6341
99	9.1	38.7	41.0	43.0	44.8	46.6	e	41 13.33	306 56 “ “	VII A 39.190	22 40 55.52	14 3 10.79	14 6344
100	6.0	37.7	39.9	41.9	44.0	46.3	c	42 41.96	306 24 10.0 9.0	III A 39.610	22 42 24.15	−14 35 0.73	−14 6346
101	9.3	53.8	55.8	57.7	59.6	1.9	a	44 27.35	306 52 10.0 9.2	I 51.790	22 44 9.52	−14 6 19.41	−14 6351
102	5.5	31.4	33.5	35.7	37.8	39.8	c	44 35.64	306 52 “ “	III (49).030	22 44 17.80	14 7 13.91	14 6354
103	9.3	......	58.3	0.4	2.1	3.8	e	44 30.68	307 12 10.0 9.1	VII 44.320	22 44 12.85	13 48 46.01	14 6353
104	8.4	36.5	38.6	40.8	43.0	45.0	c	46 40.78	306 36 10.0 8.6	V 48.530	22 46 22.93	14 23 25.70	14 6359
105	8.6	46.0	48.3	50.4	52.6	54.7	c	47 50.40	307 22 10.0 7.1	III 47.240	22 47 32.53	13 37 47.86	13 6292
106	9.2	26.3	28.5	30.3	32.0	34.4	a	49 59.95	306 26 10.0 8.0	I 44.870	22 49 42.07	14 34 33.65	14 6366
107	9.0	20.0	22.1	24.2	26.4	28.6	c	50 24.26	306 44 10.0 8.0	III 45.400	22 50 6.38	14 16 23.17	14 6367
108	9.1	51.7	54.0	56.0	58.3	0.6	c	50 56.12	306 44 “ “	III 43.365	22 50 38.23	14 17 3.21	14 6368
109	9.2	54.0	56.1	58.4	0.6	2.8	c	51 58.38	307 24 10.0 8.1	III B 43.620	22 51 40.48	13 40 9.79	13 6306
110	6.5	33.4	35.5	37.7	39.7	41.9	c	54 37.64	307 24 “ “	III 45.285	22 54 19.72	−13 36 24.44	−13 6318
111	9.1	28.6	30.8	32.8	35.0	37.0	c	56 32.84	306 30 10.0 9.0	III 45.275	22 56 14.91	−14 30 26.43	−14 6389
112	9.2	11.5	13.7	15.5	17.3	19.5	a	57 45.06	307 6 10.0 8.4	I A 41.740	22 57 27.12	13 52 15.91	14 6395
113	9.0	50.1	52.1	54.3	56.5	58.5	c	57 54.30	307 6 “ “	III A 40.880	22 57 36.36	13 52 34.09	14 6396
114	9.1	29.5	31.7	34.0	36.0	38.0	c	58 33.84	307 6 “ “	III 48.675	22 58 15.89	13 53 19.84	14 6397
115	9.0	43.3	45.6	47.8	49.8	52.0	c	59 47.70	305 52 10.0 7.6	III 46.965	22 59 29.75	15 7 56.28	15 6339
116	9.2	51.8	53.9	55.7	57.4	59.7	a	1 25.31	306 46 10.0 8.1	I A 41.850	23 1 7.33	14 12 14.68	14 6406
117	9.0	28.5	30.7	32.7	35.0	37.0	c	1 32.78	306 46 “ “	III B 45.690	23 1 14.80	14 17 31.29	14 6407
118	8.8	54.0	56.2	58.1	0.1	2.0	e	5 28.61	307 8 10.0 8.4	V 49.390	23 5 10.61	13 51 7.15	14 6415
119	9.0	9.7	11.9	14.0	15.9	17.7	e	5 44.37	307 8 “ “	VII B 48.120	23 5 26.37	13 54 46.34	14 6416
120	8.0	47.8	49.9	51.9	54.2	56.3	c	8 52.02	307 8 “ “	V B 43.280	23 8 33.99	−13 56 17.78	−14 6424
121	9.4	47.1	49.2	51.4	53.6	55.7	c	9 51.40	306 50 10.0 8.8	III 46.310	23 9 33.35	−14 10 5.39	−14 6428
122	8.5	52.0	54.0	56.3	58.3	0.5	c	10 56.22	307 16 10.0 8.5	III 47.380	23 10 38.17	13 43 43.87	13 6372
123	8.2	28.5	30.7	32.9	35.0	37.0	c	12 32.82	306 50 10.0 8.0	III 42.920	23 12 14.75	14 11 10.80	14 6438
124	9.0	53.6	55.7	57.8	0.0	2.0	c	12 57.82	307 20 10.0 8.5	V C 46.700	23 12 39.75	13 46 24.03	14 6440
125	9.3	4.5	6.5	8.5	10.7	12.9	c	14 8.62	307 20 “ “	III A 42.430	23 13 50.54	13 38 3.25	13 6382
126	8.7	26.9	29.3	31.3	33.6	35.6	c	16 31.34	306 48 10.0 8.6	III 45.490	23 16 13.24	14 12 21.18	14 6455
127	8.6	25.5	27.7	29.6	32.0	34.0	c	20 29.76	306 24 10.0 8.6	III A 43.155	23 20 11.63	14 33 51.67	14 6467
128	9.2	51.4	53.5	55.7	57.9	0.0	c	20 55.70	306 24 “ “	III C 47.165	23 20 37.56	14 42 16.25	14 6470
129	9.1	45.5	47.5	49.5	51.8	53.8	c	23 49.62	306 24 “ “	III 49.370	23 23 31.46	14 35 7.80	14 6475
130	9.2	16.6	18.7	20.8	22.9	25.1	c	25 20.82	306 28 10.0 8.6	III 47.480	23 25 2.65	−14 31 43.86	−14 6478
131	9.1	8.9	11.1	13.3	15.4	17.6	c	27 13.26	306 28 “ “	III 51.840	23 26 55.07	−14 30 20.20	−14 6483
132	9.1	33.4	35.3	37.2	39.0	41.3	a	29 6.82	306 58 10.0 8.6	I 44.695	23 28 48.62	14 2 34.49	14 6490
133	8.2	13.0	15.0	17.2	19.5	21.5	c	29 17.24	306 58 “ “	III C 46.860	23 28 59.04	14 8 20.63	14 6492
134	9.0	47.4	49.5	51.7	53.8	56.0	c	30 51.68	306 58 “ “	III A 41.110	23 30 33.48	14 0 29.46	14 6496
135	8.9	19.6	21.6	23.7	25.9	27.9	c	31 23.74	306 58 “ “	III 48.520	23 31 5.53	14 1 22.64	14 6499
136	9.3	54.8	57.0	59.1	1.2	3.4	c	31 59.10	306 58 “ “	III B 41.900	23 31 40.88	14 6 42.95	14 6502
137	8.8	36.2	38.4	40.4	42.3	44.1	e	32 10.78	306 58 “ “	V B 41.010	23 31 52.56	14 7 1.58	14 6504
138	8.6	36.2	38.3	40.4	42.7	44.8	c	33 40.48	306 44 10.0 8.1	III 46.735	23 33 22.25	14 15 57.80	14 6509
139	8.9	21.8	23.8	26.0	28.3	30.3	c	36 26.04	306 58 10.0 8.9	III 47.290	23 36 7.80	14 1 46.18	14 6523
140	9.3	37.0	39.0	41.3	43.5	45.7	c	39 41.30	307 2 10.0 8.4	III 47.050	23 39 23.04	−13 57 50.95	−14 6535
141	8.3	3.9	6.0	8.0	10.3	12.4	c	41 8.12	307 2 “ “	III B 48.630	23 40 49.84	−14 0 33.91	−14 6539
142	8.5	22.8	24.9	27.0	29.3	31.4	c	41 27.08	307 2 “ “	V A 45.300	23 41 8.80	13 55 10.70	14 6540
143	8.2	1.1	3.2	5.2	7.4	9.7	c	43 5.32	306 32 10.0 8.6	III 46.010	23 42 47.01	14 28 12.25	14 6550
144	9.2	43.8	46.0	48.2	50.3	52.4	c	43 48.14	306 32 “ “	III 51.230	23 43 29.82	−14 26 32.09	−14 6552

Reduction Elements. Zone 139.

1895.	OBSERVED.			ADOPTED.		
	c	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
September 27.3....	−0.306	−0.070	−0.584	−0.272	−0.022	−0.584
27.5....	−0.238	+0.026				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	f Sagittarii		Mayer 811		4 Capricorni		β Capricorni		ρ Capricorni		c^a Aquarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	301 2 5.40		298 10 9.00		298 54 9.45		305 54 9.70		302 52 9.15		299 18 8.30	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	42.860	4 57.06	41.400	4 29.08	45.620	5 50.04		6 46.67	46.240	6 1.94	44.920	5 36.38
II Red. to Mer.	.890	0.20	.445	0.23	.670	0.22		0.15	.290	0.18	.990	0.22
VI Inclination	43.050		.590		.820		48.700	−1.68	.440		45.065	
VII Refraction	.100	1 33.2	.630	1 44.8	.840	1 41.8	.685	1 17.7	.465	1 27.1	.130	1 41.2

	b^1 Aquarii		ω^2 Aquarii		Mayer 986	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	300 22 9.30		305 54 9.20		310 28 9.00	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	45.115	5 40.33	47.070	6 17.58	46.295	6 2.75
II Red. to Mer.	.170	0.21	.115	0.15	.330	0.10
VI Inclination	.310		.220		.475	
VII Refraction	.335	1 36.9	.290	1 18.6	.505	1 6.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
λ Ursae Minoris	19 27 36.97	4	+9.09	[−28.92]	50 [illegible]	....
f Sagittarii	19 40 47.45	11	−0.84	−28.87	301 5 29.5	17.2
Mayer 811	19 58 4.43	11	−0.86	−28.92	298 12 53.5	16.4
4 Capricorni	20 12 24.73	11	−0.86	−28.85	298 58 17.9	17.9
β Capricorni	20 15 40.01	8	−0.78	−28.97	305 59 37.1	17.9
ρ Capricorni	20 23 25.73	11	−0.82	−28.94	302 56 44.2	17.1
c^a Aquarii	23 4 24.89	11	−0.85	−28.96	299 22 3.7	16.9
b^1 Aquarii	23 18 1.33	11	−0.84	−28.92	300 26 12.9	17.7
ω^2 Aquarii	23 37 50.42	11	−0.78	−28.96	305 59 8.3	17.3
Mayer 986	23 45 23.37	11	−0.74	−29.04	310 33 5.0	18.3

h		s
20.102	*dt*	−28.910
	Hourly rate	−0.0180
		° ′ ″
	Adopted Equator Point	321 6 17.41

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 42	29.900	66.9	64.5
21 0	29.926	63.8	61.4
22 1	29.938	62.2	59.9
23 1	29.930	60.9	58.7
23 48	29.930	60.5	58.2

Notes.

12. Suspected companion s. p.
19. Images quite steady.
32. Close double, mean observed.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				D = Z. D. N. to 1895.0				R		
			305°	306°	307°	308°	305°	306°	307°	308°	305° 30′	306° 30′	307° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
305	−0.794	20 0	......	+13.440	+13.358	+13.276	....	− 3.92	− 4.25	− 4.57	79.10	76.28	73.57
306	0.784	20 30	+13.235	13.164	13.092	13.020	− 6.43	6.73	7.03	7.33	79.32	76.49	73.77
307	0.775	21 0	12.942	12.880	12.820	12.759	9.28	9.56	9.84	10.12	79.54	76.70	73.98
308	−0.765	21 30	12.647	12.596	12.547	12.498	12.11	12.36	12.62	12.86	79.69	76.84	74.11
		22 0	+12.354	12.316	12.279	12.242	−14.87	15.09	15.31	15.52	79.84	76.98	74.25
		22 30	......	12.043	12.017	11.994	....	17.68	17.86	18.05	79.93	77.07	74.34
		23 0	......	11.781	11.771	11.761	....	20.11	20.26	20.40	80.02	77.16	74.42
		23 30	......	11.538	11.540	11.544	....	22.32	22.43	22.53	80.04	77.18	74.44
		0 0	......	+11.314	+11.332	+11.349	....	−24.30	−24.36	−24.43	.....	.....	.....

1895 SEPTEMBER 30. ZONE 140. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.6	4.2	6.4	8.6	10.9	13.0	c	10 8.62	304 52 10.0 11.0	III	43.050	20 9 51.01	−16 9 40.09	−16 5543
2	9.2	50.2	52.3	54.5	56.7	58.8	c	13 54.50	304 12 10.0 10.5	V	46.530	20 13 36.91	16 48 35.74	16 5560
3	9.0	55.0	57.1	59.4	1.5	3.6	c	15 59.32	303 30 10.0 10.6	III	43.700	20 15 41.75	17 31 30.14	17 5951
4	8.3	13.1	15.3	17.5	19.8	21.9	c	25 17.52	304 12 10.0 10.2	III B	42.420	20 24 59.82	16 53 3.80	17 6003
5	9.2	43.3	45.4	47.4	49.9	52.0	c	25 47.60	304 12 " "	III A	42.340	20 25 29.89	16 46 38.02	16 5621
6	8.0	22.8	24.9	26.9	28.7	31.0	a	35 56.99	303 18 10.0 10.4	I	41.800	20 35 39.23	17 44 0.74	17 6059
7	9.2	52.4	54.5	56.6	58.9	1.0	c	35 56.68	303 4 10.0 9.5	III	44.405	20 35 38.94	17 57 13.45	18 5746
8	9.3	31.6	33.8	35.8	37.8	39.6	e	36 5.64	303 4 " "	V B	48.580	20 35 47.90	17 59 8.13	18 5749
9	9.1	18.3	20.6	22.7	24.8	27.0	c	37 22.68	304 18 10.0 10.0	III	46.625	20 37 4.85	16 42 26.64	16 5674
10	9.3	59.9	2.0	4.3	6.4	8.7	c	41 4.26	303 46 10.0 10.1	III	45.570	20 40 46.42	−17 14 47.50	−17 6079

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
11	8.7	59.5	1.7	3.8	5.9	8.0	c	42 3.78	304 44 10.0 9.5	III 42.535	20 41 45.87	—16 17 43.03	—16 5694
12	8.0	48.8	51.1	53.3	55.5	57.7	c	42 53.28	303 54 10.0 8.4	III 47.090	20 42 35.42	17 6 18.39	17 6088
13	8.5	32.3	34.3	36.4	38.7	40.9	c	45 36.52	303 22 10.0 9.2	III 42.275	20 45 18.66	17 39 51.30	17 6104
14	7.8	4.9	7.1	9.3	11.5	13.6	c	46 9.28	303 8 10.0 9.5	III 45.810	20 45 51.43	17 52 43.91	18 5795
15	8.9	31.5	33.7	35.8	38.0	40.2	c	47 35.84	303 8 " "	III B 45.540	20 47 17.97	17 56 2.06	18 5800
16	9.4	52.0	54.2	56.3	58.6	0.7	c	47 56.36	303 22 10.0 9.0	V B 47.090	20 47 38.47	17 41 33.32	17 6113
17	9.4	25.1	27.3	29.3	33.7	35.3	c_3 d_2	48 25.05	303 22 " "	V A 41.450	20 48 7.15	17 36 52.73	17 6115
18	9.5	4.9	7.2	9.4	11.6	13.6	c	52 9.34	304 14 10.0 9.1	III B 45.905	20 51 51.36	16 49 51.01	17 6133
19	9.1	40.9	43.0	45.2	47.4	49.5	c	52 45.20	304 14 " "	III B 47.490	20 52 27.22	16 49 20.45	16 5744
20	9.3	22.6	24.6	27.0	29.2	31.2	c	53 26.92	304 14 " "	III 42.100	20 53 8.93	—16 47 50.46	—16 5749
21	9.4	5.4	7.6	9.7	11.9	14.0	c	55 9.72	304 14 " "	III A 39.240	20 54 51.71	—16 45 29.58	—16 5761
22	9.1	8.0	10.2	12.4	14.6	16.8	c	56 12.40	303 46 10.0 10.0	III 45.360	20 55 54.40	17 14 48.19	17 6154
23	9.0	25.8	27.9	30.0	32.2	34.5	c	57 30.08	304 14 10.0 9.5	III 47.210	20 57 12.04	16 46 11.30	16 5771
24	9.3	19.5	21.6	23.7	26.0	28.0	c	1 23.76	304 10 10.0 9.6	III C 47.480	21 1 5.70	16 56 31.64	17 6178
25	7.8	54.2	56.4	58.4	0.8	2.7	c	1 58.50	304 10 " "	III 49.680	21 1 40.42	16 49 23.10	17 6181
26	9.1	6.6	8.5	10.8	12.9	15.1	c	2 10.78	304 10 " "	V B 48.400	21 1 52.70	16 53 2.45	17 6184
27	8.0	51.5	53.6	55.7	57.9	0.0	c	2 55.74	303 58 10.0 9.8	V B 39.940	21 2 37.66	17 7 45.15	17 6189
28	7.0	3.5	5.7	7.9	10.2	12.3	c	4 7.92	303 58 " "	III A 39.940	21 3 49.83	17 1 14.68	17 6193
29	9.0	0.7	2.9	5.0	7.2	9.3	c	5 5.02	303 38 10.0 9.4	V A 38.200	21 4 46.93	17 21 50.58	17 6196
30	9.2	53.8	56.0	58.3	0.4	2.4	c	5 58.18	304 12 10.0 9.2	V 47.610	21 5 40.06	—16 48 3.48	—16 5815
31	8.5	21.9	23.9	26.2	28.4	30.5	c	7 26.18	304 44 10.0 9.3	III 49.050	21 7 8.01	—16 15 32.62	—16 5821
32	8.6	25.0	27.2	29.2	31.6	33.7	c	8 29.34	303 2 10.0 8.8	III 45.940	21 8 11.25	17 58 37.35	18 5886
33	9.0	36.4	38.6	40.8	43.0	45.1	c	9 40.78	303 2 " "	III 43.860	21 9 22.68	17 59 17.04	18 5892
34	7.0	55.5	57.8	59.9	2.2	4.4	c	13 59.96	304 24 10.0 9.2	III 47.700	21 13 41.74	16 35 58.27	16 5840
35	9.3	51.0	53.2	55.4	57.6	59.8	c	14 55.40	304 6 10.0 9.0	III 48.800	21 14 37.19	16 53 37.94	17 6238
36	8.0	31.2	33.2	35.5	37.8	39.8	c	16 35.50	304 20 10.0 9.4	III 42.470	21 16 17.26	16 41 38.23	16 5850
37	9.4	23.8	26.0	28.2	30.5	32.6	c	17 28.22	304 8 10.0 9.4	III C 49.150	21 17 9.99	16 57 56.63	17 6247
38	9.3	34.7	36.9	39.0	41.4	43.5	c	18 39.10	304 8 " "	III 47.650	21 18 20.85	16 51 59.01	17 6253
39	9.3	52.0	54.0	56.2	58.5	0.7	c	19 56.28	304 8 " "	III A 43.830	21 19 38.02	16 49 56.68	17 6262
40	9.3	47.0	49.2	51.4	53.5	55.7	c	21 51.36	304 8 " "	III 47.520	21 21 33.08	—16 52 0.90	—17 6272
41	9.2	19.0	21.0	22.7	24.7	27.0	a	24 52.91	303 52 10.0 9.5	I 44.820	21 24 34.60	—17 8 51.39	—17 6297
42	8.2	59.6	1.8	3.9	6.2	8.2	c	25 3.94	304 16 10.0 9.7	III 45.750	21 24 45.62	16 44 33.77	16 5876
43	8.4	18.6	20.7	22.6	24.5	26.8	a	28 52.77	303 18 10.0 9.4	I 47.190	21 28 34.45	17 42 6.94	17 6308
44	8.4	53.2	55.2	57.0	59.0	1.4	a	29 27.16	304 2 10.0 9.5	I 47.240	21 29 8.80	16 58 3.67	17 6314
45	8.6	26.3	28.3	30.3	32.2	34.5	a	30 0.28	304 18 10.0 10.0	I 45.460	21 29 41.91	16 42 36.68	16 5889
46	8.7	27.5	29.6	31.8	34.0	36.0	c	30 31.78	303 54 10.0 9.6	III 47.370	21 30 13.42	17 6 2.86	17 6318
47	8.5	20.2	22.3	24.6	26.7	28.8	c	31 24.52	303 28 10.0 10.0	III 44.965	21 31 6.16	17 32 49.98	17 6322
48	9.2	12.8	14.8	17.0	19.2	21.4	c	32 17.04	304 18 10.0 10.3	III B 47.610	21 31 58.65	16 45 9.72	16 5899
49	8.6	31.5	33.7	35.8	38.1	40.2	c	32 35.86	304 18 " "	III 47.210	21 32 17.46	16 42 4.05	16 5901
50	.....	17.5	19.5	21.3	23.3	25.6	a	34 51.48	303 52 10.0 9.0	I 51.050	21 34 33.06	—17 6 50.38	—17 6340
51	9.3	49.5	51.6	53.5	55.4	57.7	a	35 23.59	303 52 " "	I (C) 51.140	21 35 5.17	—17 13 14.94	—17 6343
52	9.2	0.3	2.6	4.6	7.0	9.0	c	37 4.70	303 40 10.0 9.1	V 49.115	21 36 46.27	17 19 30.59	17 6353
53	9.3	48.5	50.5	52.6	54.6	56.5	e	37 22.62	304 2 10.0 9.6	V B 48.740	21 37 4.18	17 0 49.88	17 6354
54	8.9	26.4	28.4	30.6	32.8	34.8	c	39 30.60	304 2 " "	III 43.950	21 39 12.14	16 59 6.65	17 6363
55	9.4	37.8	39.8	41.9	44.3	46.4	c	41 42.04	304 2 " "	III 41.330	21 41 23.56	16 59 56.62	17 6370
56	8.0	12.7	14.9	17.1	19.3	21.4	c	42 17.08	303 46 10.0 9.6	III 49.130	21 41 58.59	17 13 27.61	17 6371
57	8.2	9.0	11.0	13.3	15.5	17.5	c	45 13.26	304 20 10.0 9.3	III 48.770	21 44 54.73	16 39 32.57	16 5952
58	9.2	50.3	52.3	54.2	56.0	58.3	a	47 24.19	304 20 " "	I B 45.800	21 47 5.64	16 43 40.79	16 5961
59	9.1	13.6	15.8	17.7	20.2	22.2	c	47 17.90	303 54 10.0 9.6	III C 46.150	21 46 59.36	17 12 49.87	17 6395
60	8.9	26.0	28.1	30.3	32.6	34.6	c	48 30.32	303 54 " "	III C 44.790	21 48 11.76	—17 13 15.82	—17 6398[1]
61	9.5	46.8	48.7	51.2	53.2	55.5	c	48 51.08	303 54 " "	V 46.660	21 48 32.52	-17 6 15.02	-17 6402
62	9.4	24.2	26.3	28.4	30.5	32.2	e	48 58.38	303 54 " "	VII 44.710	21 48 39.82	17 6 53.56	17 6403
63	9.4	24.4	26.5	28.4	30.2	32.6	a	51 58.34	304 34 10.0 10.0	I 46.670	21 51 39.72	16 26 9.37	16 5979
64	9.0	7.5	9.5	11.7	13.9	16.1	c	52 11.74	304 18 10.0 10.8	III 45.010	21 51 53.12	16 42 43.09	16 5982
65	9.4	25.7	27.9	30.0	32.3	34.3	c	54 30.04	304 12 10.0 9.3	III 46.650	21 54 11.40	16 48 12.36	17 6414
66	9.2	59.3	1.6	3.6	5.9	8.0	c	55 3.68	304 12 " "	V B 43.830	21 54 45.04	16 52 21.24	17 6416
67	9.0	36.5	38.6	40.8	43.0	45.0	c	56 40.78	303 44 10.0 10.0	III 48.960	21 56 22.13	17 15 28.76	17 6421
68	8.9	14.9	17.2	19.3	21.5	23.6	c	57 19.30	304 20 10.0 9.5	III 46.925	21 57 0.63	16 40 6.22	16 6003
69	9.1	8.5	10.5	12.6	14.9	17.0	c	58 12.70	304 20 " "	III 49.270	21 57 54.02	16 39 21.08	16 6005
70	8.6	59.7	1.9	4.0	6.3	8.3	c	59 4.04	304 20 " "	III 51.040	21 58 45.35	—16 38 47.01	—16 6012
71	9.3	22.0	24.1	26.4	28.6	30.8	c	1 26.38	303 52 10.0 9.4	III 46.370	22 1 7.68	—17 8 17.78	—17 6439
72	9.5	9.6	11.7	13.5	15.5	17.8	a	2 43.70	303 40 10.0 9.5	I C 45.730	22 2 24.99	17 26 55.30	17 6446
73	9.3	45.2	47.3	49.4	51.7	53.9	c	2 49.50	303 40 " "	III 47.450	22 2 30.79	17 19 57.43	17 6447
74	9.2	17.6	19.8	21.9	24.3	26.3	c	3 21.98	303 40 " "	III A 43.980	22 3 3.26	17 17 48.56	17 6452
75	9.3	39.0	41.0	42.9	44.7	47.0	a	5 12.82	304 42 10.0 9.7	I A 42.300	22 4 54.06	16 16 15.72	16 6033
76	9.0	10.4	12.7	14.8	17.0	19.0	c	5 14.78	304 42 " "	III C 43.015	22 4 56.02	16 25 45.31	16 6034
77	8.0	23.3	25.5	27.8	29.9	32.2	c	14 27.74	303 54 10.0 9.1	III (C) 48.020	22 14 8.90	17 12 10.90	17 6491
78	9.2	17.9	19.9	22.0	24.1	26.3	c	15 22.04	303 54 " "	III 50.780	22 15 3.20	17 4 51.64	17 6496
79	9.3	10.0	12.2	14.4	16.6	18.7	c	17 14.38	303 54 " "	III C 50.590	22 16 55.51	17 11 21.28	17 6504
80	8.5	54.9	57.0	59.0	0.7	3.1	a	24 29.00	303 42 10.0 8.5	I 43.465	22 24 10.06	—17 19 10.52	—17 6530
81	8.9	33.9	35.9	38.0	40.3	42.5	c	24 38.12	303 42 " "	III 43.780	22 24 19.18	—17 19 5.99	—17 6532
82	8.8	34.5	36.5	38.7	40.9	43.0	c	26 38.72	303 54 10.0 8.3	III 42.620	22 26 19.76	—17 7 27.59	—17 6542

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
83	9.1	21.0	23.0	25.0	27.4	29.6	c	29 25.20	304 6 10.0 9.1	III B 44.460	22 29 6.21	−16 58 4.36	−17 6549
84	6.5	59.0	1.0	3.4	5.6	7.7	c	31 3.34	304 6 " "	III 46.080	22 30 44.34	16 54 19.83	17 6554
85	9.4	18.0	20.1	22.4	24.6	26.7	c	31 22.36	304 6 " "	V B 47.780	22 31 3.35	16 57 2.02	17 6557
86	8.8	24.4	26.5	28.8	31.0	33.1	c	32 28.76	304 6 " "	III 49.130	22 32 9.74	16 53 21.18	17 6564
87	8.7	22.9	25.0	27.2	29.3	31.5	c	33 27.18	304 6 " "	III C 49.970	22 33 8.15	16 59 31.20	17 6566
88	8.0	31.6	33.9	36.0	38.3	40.4	c	35 36.04	303 42 10.0 8.4	III 48.620	22 35 16.99	17 17 32.29	17 6571
89	8.2	25.7	28.0	30.2	32.3	34.6	c	38 30.16	304 20 10.0 9.1	III 48.100	22 38 11.08	16 39 39.84	16 6142
90	9.6	44.8	46.7	48.5	50.5	52.6	a	40 18.59	304 20 " "	I B 41.520	22 39 59.49	−16 44 57.56	−16 6148
91	9.0	11.2	13.3	15.3	17.7	19.7	c	40 15.44	303 54 10.0 9.2	V 44.975	22 39 56.34	−17 6 42.31	−17 6584
92	8.9	32.3	34.7	36.8	41.0	42.6	c_3 d_2	40 32.41	303 54 " "	VI 47.460	22 40 13.32	17 5 55.20	17 6586
93	8.0	0.9	3.0	5.3	7.4	9.5	c	45 5.22	304 10 10.0 8.9	III 45.380	22 44 46.08	16 50 32.26	17 6603
94	9.3	58.3	0.4	2.5	4.8	6.9	c	47 2.58	303 48 10.0 9.0	III 45.915	22 46 43.41	17 12 22.96	17 6611
95	8.5	8.0	10.0	11.8	13.6	15.9	a	48 41.74	304 52 10.0 9.9	I 42.525	22 48 22.55	16 9 22.72	16 6170
96	9.0	12.0	14.2	16.3	18.5	20.6	c	49 16.32	303 26 10.0 9.8	III 47.680	22 48 57.13	17 33 49.68	17 6618
97	8.2	50.0	52.0	54.3	56.5	58.6	c	51 54.28	304 12 10.0 10.0	III 46.130	22 51 35.07	16 48 16.86	17 6625
98	8.2	30.0	32.3	34.7	36.7	39.0	c	52 34.54	303 54 10.0 9.5	III A 42.840	22 52 15.32	17 4 5.74	17 6630
99	9.4	45.3	47.4	49.6	51.8	53.8	c	53 49.58	303 54 " "	III C 47.620	22 53 30.35	17 12 15.56	17 6635
100	8.0	17.6	19.9	21.8	23.8	25.6	e	53 51.81	303 54 " "	V 50.810	22 53 32.58	−17 4 49.47	−17 6636
101	8.0	43.2	45.2	47.5	49.6	51.7	c	54 47.44	304 4 10.0 9.6	V 47.870	22 54 28.20	−16 55 45.30	−17 6640
102	8.7	47.0	49.0	51.3	53.6	55.6	c	59 51.30	304 44 10.0 9.0	III 47.780	22 59 32.01	16 15 43.81	16 6204
103	8.9	39.5	41.7	43.8	46.0	48.3	c	1 43.86	303 50 10.0 10.0	III 44.490	23 1 24.55	17 10 49.13	17 6670
104	8.9	8.0	10.0	12.2	14.5	16.6	c	3 12.26	304 8 10.0 10.1	III 44.040	23 2 52.94	16 52 56.74	17 6680
105	9.1	42.6	44.5	46.6	48.4	50.6	a	6 16.55	303 58 10.0 9.0	III 46.370	23 5 57.20	17 2 13.03	17 6691
106	8.9	34.2	35.8	40.1	42.2	44.3	b_2 c_3	6 44.40	303 34 10.0 9.2	III 45.120	23 6 25.04	17 26 38.16	17 6694
107	9.1	21.9	24.0	26.1	28.3	30.6	c	7 26.18	303 6 10.0 9.5	III 47.650	23 7 6.82	17 53 50.94	18 6267
108	9.1	3.3	5.3	7.4	9.5	11.2	e	7 37.28	303 6 " "	V A 43.590	23 7 17.91	17 51 54.94	18 6268
109	9.1	59.0	1.2	3.1	5.2	7.0	e	8 33.03	303 6 " "	V 44.780	23 8 13.66	17 54 47.35	18 6271
110	9.2	18.3	20.3	22.4	24.7	26.9	c	9 22.52	303 6 " "	V 43.180	23 9 3.14	−17 55 18.03	−18 6274
111	......	16.2	20.3	22.7	24.9	29.2	c_1 d_1	10 20.50	303 46 10.0 10.0	V A 38.910	23 10 1.11	−17 13 22.40	−17 6713
112	......	56.0	58.4	0.2	2.2	3.9	e	10 30.23	304 0 10.0 10.0	VII A 38.580	23 10 10.84	16 59 29.32	17 6714
113	......	28.2	30.2	32.4	34.7	36.8	c	12 32.46	304 18 10.0 10.6	III 43.580	23 12 13.05	16 43 4.70	16 6254
114	9.3	1.5	3.7	5.8	8.0	10.1	c	13 5.82	304 6 10.0 10.0	V 48.470	23 12 46.41	16 53 33.12	17 6719
115	9.4	20.8	22.9	24.8	26.5	28.8	a	14 54.81	303 48 10.0 10.1	I B 45.510	23 14 35.37	17 15 40.99	17 6728
116	9.3	56.5	58.6	0.8	3.2	5.3	c	15 0.88	303 48 " "	III 50.290	23 14 41.44	17 10 57.69	17 6730
117	8.4	59.4	1.3	3.1	5.0	7.4	a	16 33.29	303 48 " "	I B 50.200	23 16 13.84	17 14 10.97	17 6733
118	9.4	53.6	56.0	58.0	0.3	2.3	c	16 58.04	303 48 " "	III B 47.400	23 16 38.58	17 15 6.46	17 6737
119	9.2	22.9	25.0	27.0	29.3	31.4	c	19 27.12	304 16 10.0 9.7	V 48.750	23 19 7.65	16 43 27.35	16 6278
120	9.3	4.0	6.2	8.2	10.6	12.5	c	21 8.30	304 16 " "	III A 44.730	23 20 48.81	−16 41 27.78	−16 6285
121	8.9	36.7	38.9	41.0	43.3	45.3	c	21 41.04	304 16 " "	III C 49.300	23 21 21.55	−16 49 41.66	−17 6752
122	9.6	9.0	11.2	13.4	15.7	17.6	c	23 13.38	304 24 10.0 9.1	III 45.670	23 22 53.88	16 36 25.03	16 6294
123	9.3	38.8	40.9	43.1	45.3	47.5	c	24 43.12	303 42 10.0 9.0	III 47.610	23 24 23.59	17 17 50.05	17 6759
124	8.0	26.4	28.7	30.5	32.3	34.6	a	26 0.44	304 28 10.0 9.4	I 46.970	23 25 40.91	16 31 58.25	16 6303
125	9.5	54.2	56.3	58.3	0.3	2.8	c	27 58.38	304 52 10.0 9.5	V 46.375	23 27 38.84	16 8 11.33	16 6310
126	8.7	55.1	57.3	59.5	1.6	3.9	c	28 59.48	304 8 10.0 9.6	III 47.210	23 28 39.92	16 51 56.14	17 6774
127	9.1	47.1	49.3	51.5	53.8	56.0	c	29 51.54	303 36 10.0 9.1	III 48.225	23 29 31.96	17 23 38.60	17 6777
128	9.1	25.6	27.7	30.1	32.3	34.5	c	30 30.04	303 36 " "	III 43.300	23 30 10.46	17 25 13.13	17 6778
129	8.0	0.5	2.6	4.8	6.9	9.2	c	31 4.80	304 10 10.0 9.4	III 45.420	23 30 45.22	16 50 30.55	17 6780
130	9.4	17.4	19.6	21.7	24.0	26.1	c	32 21.76	303 30 10.0 9.5	III C 46.710	23 32 2.16	−17 36 34.08	−17 6781
131	9.3	58.2	0.4	2.6	4.6	6.4	e	32 32.45	303 30 " "	V A 46.820	23 32 12.85	−17 26 51.85	−17 6782
132	8.8	38.2	40.5	42.5	45.0	47.1	c	36 42.66	303 46 10.0 9.6	III 47.560	23 36 23.02	17 13 50.77	17 6797
133	9.3	14.5	16.6	18.8	21.0	23.1	c	40 18.80	303 56 10.0 9.0	III 47.630	23 39 59.14	17 3 49.36	17 6810
134	9.1	17.3	19.3	21.1	23.1	25.5	a	43 51.24	304 10 10.0 9.1	I 48.470	23 43 31.55	16 49 31.07	17 6822
135	8.4	13.1	15.3	17.2	19.5	21.6	c	44 17.34	304 10 " "	III 50.010	23 43 57.65	−16 49 3.07	−17 6825

Reduction Elements. Zone 140.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
September 30.3....	−0.057	+0.062	−0.570	−0.025	+0.094	−0.570
30.5....	+0.007	+0.126				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		h Sagittarii		Mayer 811		Lalande 38458		α^2 Capricorni		ρ Capricorni		c^2 Aquarii	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	295 56 15.30		298 10 9.80		313 58 10.05		308 10 10.25		302 52 10.00		299 18 9.25	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	43.100	5 1.54	41.450	4 29.71		5 20.77	43.680	5 13.15	46.260	6 2.42	44.990	5 37.42
II	Red. to Mer.	.150	0.25	.485	0.23		0.07	.800	0.13	.340	0.18	45.065	0.22
VI	Inclination	.280		.625		44.175	−1.68	.880		.460		.130	
VII	Refraction	.305	1 58.5	.635	1 48.0	.250	1 0.1	.900	1 13.8	.475	1 29.7	.135	1 44.0

		b^1 Aquarii		ω^2 Aquarii		Mayer 986	
		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	300 22 9.80		305 54 9.45		310 28 9.55	
		r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.		5 43.17	47.150	6 18.81	46.350	6 2.58
II	Red. to Mer.		0.21	.200	0.15	.300	0.10
VI	Inclination	45.340	−1.68	.290		.430	
VII	Refraction	.420	1 39.8	.315	1 21.0	.490	1 8.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
λ Ursae Minoris	19 27 16.93	4	+26.58	[−30.69]	50 2	....
h Sagittarii	19 30 54.02	11	− 0.55	[−30.87]	295 59 18.6	15.2
Mayer 811	19 58 5.76	11	− 0.52	−30.64	298 12 51.7	14.8
Lalande 38458	20 3 4.50	11	− 0.37	−30.61	314 2 29.1	15.7
α^2 Capricorni	20 12 48.21	11	− 0.42	−30.62	308 14 9.7	16.6
ρ Capricorni	20 23 27.07	11	− 0.48	−30.66	302 56 42.9	15.9
c^2 Aquarii	23 4 26.22	11	− 0.51	−30.63	299 22 2.9	16.3
b^1 Aquarii	23 18 2.65	11	− 0.50	−30.58	300 26 11.7	16.8
ω^2 Aquarii	23 37 51.80	11	− 0.45	−30.67	305 59 7.4	16.6
Mayer 986	23 45 24.67	11	− 0.40	−30.67	310 33 3.4	16.8

h 20.155 .... *dt* .... s −30.632

Hourly rate .... − 0.0018

Adopted Equator Point .... 321° 6′ 16″.08

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 40	29.868	51.8	49.3
21 0	29.856	50.2	46.5
22 0	29.868	48.4	45.2
23 0	29.876	47.1	44.3
23 47	29.880	46.5	42.3

Notes.

λ Ursae Minoris. Image very unsteady.

89. Close double, mean observed.

90. Images are fair but not the best.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			$D =$ Z. D. N. to 1895.0			*R*		
			303°	304°	305°	303°	304°	305°	303°	304°	305°
°	s	h m	s	s	s	″	″	″	″	″	″
303	−0.475	20 0	+13.733	+13.649	+13.567	− 2.75	− 3.08	− 3.42	89.43	86.14	82.98
304	0.465	20 30	13.424	13.352	13.278	5.60	5.92	6.22	89.60	86.30	83.14
305	−0.456	21 0	13.104	13.042	12.979	8.49	8.79	9.08	89.76	86.46	83.29
		21 30	12.778	12.728	12.678	11.36	11.63	11.89	89.91	86.60	83.43
		22 0	12.451	12.412	12.376	14.17	14.41	14.65	90.05	86.74	83.56
		22 30	12.129	12.105	12.082	16.87	17.07	17.27	90.16	86.84	83.66
		23 0	11.817	11.808	11.798	19.40	19.57	19.74	90.26	86.94	83.75
		23 30	11.522	11.527	11.533	21.73	21.86	21.99	90.49	87.16	83.97
		0 0	+11.249	+11.267	+11.286	−23.83	−23.92	−24.02	90.72	87.38	84.18

1895 OCTOBER 2. ZONE 141. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	7.5	41.2	43.4	45.5	47.7	49.8	c	13 45.52	306 24 11.5 13.2	III	47.440	20 13 26.32	−14 36 10.06	−14 5708
2	8.6	18.8	20.9	23.0	25.0	27.2	c	45 22.98	305 50 10.0 11.2	III	46.510	20 45 3.52	15 10 23.17	15 5809
3	8.4	11.0	13.2	15.3	17.6	19.7	c	50 15.36	306 2 10.0 11.1	III	42.040	20 49 55.84	14 59 47.39	15 5835
4	8.0	25.7	27.8	30.0	32.2	34.2	c	51 29.98	304 54 10.0 11.9	III C	42.675	20 51 10.52	16 14 3.70	16 5734
5	8.7	49.6	51.8	54.0	56.2	58.4	c	51 54.00	304 54 " "	III	47.770	20 51 34.53	16 5 59.65	16 5738
6	8.3	45.0	47.2	49.4	51.6	53.7	c	52 49.38	305 28 10.0 11.2	III	45.150	20 52 29.87	15 32 48.55	15 5846
7	8.5	36.0	38.2	40.5	42.6	44.8	c	53 40.42	305 (0) 10.0 11.0	III C	48.830	20 53 20.93	16 6 5.27	16 5753
8	8.9	7.5	9.7	11.7	13.7	15.4	e	53 41.84	305 (0) " "	VII	44.920	20 53 22.34	16 0 56.60	16 5754
9	8.9	55.4	57.5	59.6	1.8	4.0	c	54 59.66	305 30 10.0 11.6	III	46.975	20 54 40.13	15 30 12.76	15 5858
10	9.1	42.8	44.8	46.6	48.5	50.7	a	58 16.47	305 26 10.0 11.4	I	49.520	20 57 56.90	−15 33 21.95	−15 5874

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ' " "	r	h m s	° ' "	°
11	9.0	32.6	34.7	36.6	38.4	40.8	a	59 6.51	304 56 10.0 11.4	I C 45.150	20 58 46.96	−16 11 13.33	−16 5779
12	9.0	12.8	14.9	17.0	19.3	21.5	c	59 17.10	304 56 " "	III A 43.990	20 58 57.54	16 1 55.36	16 5780
13	8.0	21.1	23.2	25.5	27.6	29.8	c	0 25.44	305 42 10.0 11.4	III 46.900	21 0 5.83	15 18 12.61	15 5884
14	9.0	30.0	32.2	34.3	36.5	38.7	c	1 34.34	304 58 10.0 11.5	III (A) 48.780	21 1 14.75	15 58 22.83	16 5792
15	7.8	54.0	56.0	58.2	0.5	2.5	c	1 58.24	304 58 " "	III C 46.940	21 1 38.66	16 8 39.60	16 5798
16	7.8	39.9	42.0	44.0	46.3	48.5	c	2 44.14	304 58 " "	III 48.980	21 2 24.54	16 1 34.11	16 5800
17	......	50.3	52.3	54.5	56.6	58.8	c	4 54.50	304 58 " "	III B 43.720	21 4 34.88	16 6 27.89	16 5810
18	9.2	53.5	55.8	57.9	0.0	2.1	c	5 57.86	305 6 10.0 11.2	III 47.170	21 5 38.22	15 54 7.98	16 5814
19	8.3	38.5	40.6	42.6	44.8	47.2	c	6 42.74	305 38 10.0 11.0	III 47.440	21 6 23.07	15 22 1.34	15 5910
20	8.0	5.3	7.5	9.6	11.7	13.8	c	7 9.58	305 38 " "	III B 49.690	21 6 49.91	−15 24 31.32	−15 5913
21	9.2	30.0	32.0	34.2	36.4	38.5	c	8 34.22	305 24 10.0 10.7	III C 42.820	21 8 14.55	−15 43 56.54	−15 5923
22	8.2	24.0	26.0	28.0	29.9	32.0	a	9 57.77	305 24 " "	I A 48.520	21 9 38.08	15 32 23.64	15 5929
23	9.2	10.3	12.3	14.4	16.6	18.8	c	10 14.48	305 24 " "	III B 42.300	21 9 54.79	15 40 53.30	15 5932
24	5.5	28.0	30.3	32.3	34.7	36.9	c	10 32.44	305 24 " "	V 50.050	21 10 12.75	15 35 12.55	15 5935
25	9.3	36.8	38.8	40.9	43.1	45.3	c	13 40.98	305 28 10.0 10.8	III 48.250	21 13 21.25	15 31 44.93	15 5945
26	8.0	44.5	46.5	48.2	50.2	52.4	a	16 18.15	305 28 " "	I B 48.700	21 15 58.40	15 34 47.33	15 5958
27	8.7	10.9	12.9	15.0	16.7	19.2	a	16 44.72	305 28 " "	I 50.100	21 16 24.96	15 31 7.33	15 5959
28	10.0	51.9	53.8	58.2	59.8	2.2	c_4 d_3	16 49.58	305 28 " "	III B 47.950	21 16 29.82	15 35 3.35	15 5960
29	8.8	18.5	20.7	23.0	25.0	27.2	c	18 22.88	305 32 10.0 11.0	III 48.720	21 18 3.10	15 27 34.75	15 5974
30	9.0	8.7	10.8	12.9	15.0	17.3	c	19 12.94	306 44 10.0 11.4	III 50.780	21 18 53.10	−14 14 51.78	−14 6015
31	9.1	21.4	23.4	25.6	27.7	29.7	c	20 25.56	306 44 " "	III C 45.000	21 20 5.71	−14 23 8.61	−14 6022
32	9.0	8.5	10.6	12.8	15.0	17.0	c	21 12.78	306 4 10.0 11.5	III 47.910	21 20 52.94	14 55 48.11	15 5982
33	9.1	15.1	17.1	19.4	21.4	23.6	c	22 19.32	305 44 10.0 11.9	III B 49.150	21 21 59.49	15 18 38.06	15 5987
34	9.0	49.2	51.5	53.6	55.6	57.8	c	22 53.54	305 44 " "	III 47.030	21 22 33.71	15 16 5.36	15 5990
35	8.7	35.9	38.1	40.2	42.4	44.6	c	23 40.24	305 44 " "	III 48.650	21 23 20.40	15 15 34.12	15 5992
36	9.1	40.9	43.0	45.2	47.5	49.6	c	24 45.24	306 20 10.0 10.9	III 48.230	21 24 25.36	14 39 40.93	14 6042
37	7.0	27.3	29.4	31.5	33.7	35.8	c	25 31.54	306 20 " "	III B 45.650	21 25 11.65	14 43 43.58	14 6047
38	9.1	41.1	43.1	44.9	46.8	49.2	a	27 14.69	306 20 " "	I 42.340	21 26 54.78	14 41 32.02	14 6055
39	9.0	27.3	29.3	31.4	33.6	35.7	c	27 31.46	306 6 10.0 11.0	III 45.470	21 27 11.56	14 54 33.95	15 6005
40	9.3	39.8	41.9	44.0	46.2	48.3	c	28 44.04	305 40 10.0 11.7	III 43.490	21 28 24.15	−15 21 12.54	−15 6008
41	8.8	31.6	33.8	36.0	38.0	40.3	c	29 35.94	306 42 10.0 12.0	III B 47.810	21 29 16.00	−14 20 59.93	−14 6072
42	8.9	29.4	31.3	33.2	35.1	37.4	a	31 2.90	306 42 " "	I 44.180	21 30 42.95	14 18 54.57	14 6077
43	8.9	6.9	8.5	12.6	14.8	17.0	b_2 c_3	31 16.96	306 42 " "	III C 43.710	21 30 57.01	14 25 31.21	14 6078
44	8.9	21.3	23.3	25.4	27.3	29.0	e	31 55.74	306 42 " "	V 48.550	21 31 35.78	14 17 33.40	14 6081
45	8.9	46.1	47.7	51.8	54.0	56.3	b_2 c_3	31 56.18	306 42 " "	III C 43.690	21 31 36.22	14 25 31.47	14 6082
46	9.0	55.9	58.0	0.2	2.4	4.6	c	33 0.22	307 20 10.0 11.3	III 46.810	21 32 40.22	13 40 4.05	13 5980
47	8.3	33.3	35.6	37.4	39.4	41.3	e	34 7.85	306 36 10.0 11.5	VII C 46.830	21 33 47.88	14 30 33.50	14 6095
48	8.0	3.7	5.8	7.9	10.0	12.2	c	34 7.92	306 36 " "	III A 47.375	21 33 47.94	14 20 39.38	14 6094
49	9.4	36.7	38.8	40.9	45.2	46.7	c_3 d_2	35 36.64	305 48 10.0 11.6	V (A) 46.080	21 35 16.67	15 9 7.48	15 6034
50	8.0	22.2	24.1	28.5	29.9	32.5	c_4 d_3	36 19.85	305 48 " "	VI C 49.360	21 35 59.88	−15 17 46.16	−15 6037
51	9.3	30.3	32.6	34.6	37.0	39.0	c	37 34.70	305 20 14.1 15.0	III C 44.090	21 37 14.74	−15 47 22.89	−15 6043
52	9.3	12.6	14.7	16.8	19.0	21.2	c	38 16.86	305 20 " "	III A 49.500	21 37 56.89	15 35 57.39	15 6048
53	6.0	49.0	51.3	53.4	55.6	57.8	c	38 53.42	305 48 10.0 11.0	III 45.750	21 38 33.42	15 12 27.47	15 6052
54	8.9	35.8	38.0	40.0	42.4	44.4	c	40 40.12	305 24 10.0 10.0	III 48.600	21 40 20.12	15 35 34.04	15 6058
55	9.4	56.9	59.0	1.2	3.5	5.6	c	41 1.24	305 24 " "	III C 48.040	21 40 41.25	15 42 10.91	15 6060
56	9.0	59.4	1.5	3.6	5.9	8.0	c	42 3.68	305 52 10.0 11.4	III 44.870	21 41 43.65	15 8 43.49	15 6064
57	9.0	57.0	59.2	1.3	3.5	5.6	c	46 1.32	305 44 10.0 10.8	III 47.120	21 45 41.26	15 16 0.34	15 6078
58	8.1	11.6	13.7	15.8	18.0	20.2	c	48 15.86	306 20 10.0 10.7	III 48.280	21 47 55.75	14 39 36.23	14 6150
59	9.2	32.0	34.1	36.3	38.6	40.7	c	49 36.34	305 56 10.0 10.9	III 48.765	21 49 16.23	15 3 27.68	15 6090
60	9.5	40.8	43.0	45.0	47.1	49.1	c	50 45.00	306 28 10.0 10.6	III C 48.050	21 50 24.86	−14 38 6.16	−14 6160
61	8.0	58.0	0.2	2.3	4.6	6.8	c	51 2.38	306 28 " "	V 51.560	21 50 42.25	−14 30 33.94	−14 6163
62	9.3	52.4	54.6	56.7	59.0	0.9	c	51 56.72	306 28 " "	III B 46.800	21 51 36.58	14 35 17.09	14 6170
63	9.1	31.6	33.6	35.7	38.0	40.0	c	52 35.78	306 28 " "	III 41.650	21 52 15.62	14 33 42.55	14 6175
64	8.2	31.6	33.6	35.5	37.3	39.6	a	54 5.23	306 0 10.0 11.0	I 49.290	21 53 45.08	14 59 15.22	15 6110
65	9.3	3.8	5.8	8.0	10.4	12.4	c	54 8.08	304 52 10.0 11.5	V 48.190	21 53 47.96	16 7 41.98	16 5987
66	7.8	18.0	20.1	22.3	24.4	26.5	c	56 22.26	306 10 10.0 11.5	III 52.050	21 56 2.08	14 48 22.75	15 6119
67	9.0	9.8	12.0	14.3	16.3	18.5	c	57 14.18	306 10 " "	III 48.915	21 56 53.99	14 49 22.82	15 6125
68	8.0	19.2	21.4	23.5	25.7	27.9	c	59 23.54	306 4 10.0 11.0	III 47.330	21 59 3.33	14 55 53.47	15 6133
69	9.1	34.5	36.5	38.6	40.8	42.8	c	0 38.64	305 38 10.0 10.4	III 48.780	22 0 18.44	15 21 26.94	15 6137
70	7.0	2.5	4.6	6.8	9.0	11.2	c	1 6.82	305 38 " "	III 44.080	22 0 46.61	−15 22 57.07	−15 6139
71	7.5	26.4	28.5	30.7	32.8	35.0	c	2 30.68	305 58 10.0 10.5	III A 47.190	22 2 10.44	−14 58 40.90	−15 6143
72	9.0	32.1	34.4	36.5	38.7	40.8	c	3 36.50	305 58 " "	III C 48.290	22 3 16.26	15 8 1.18	15 6150
73	9.1	35.0	37.2	39.3	41.5	43.6	c	4 39.32	305 58 " "	III 43.530	22 4 19.07	15 3 6.24	15 6151
74	7.8	7.3	9.5	11.5	13.5	15.2	e	4 41.87	306 38 10.0 11.0	V 44.230	22 4 21.60	14 22 52.15	14 6223
75	8.8	4.6	6.6	8.8	11.0	13.0	c	7 8.80	306 16 10.0 11.7	III 49.560	22 6 48.51	14 43 8.82	14 6228
76	6.5	18.3	20.5	22.6	24.7	27.0	c	7 22.62	306 16 " "	V A 45.610	22 7 2.33	14 41 10.74	14 6229
77	9.3	43.0	45.3	47.5	49.6	51.7	c	8 47.42	305 32 10.0 11.5	III (A) 42.780	22 8 27.14	15 26 5.42	15 6168
78	7.5	29.2	31.4	33.5	35.8	37.8	c	9 33.54	305 32 " "	III C 42.970	22 9 13.26	15 35 43.22	15 6169
79	8.0	24.2	26.2	28.1	29.9	32.2	a	10 57.83	306 8 10.0 11.4	I B 44.310	22 10 37.51	14 56 1.21	15 6174
80	9.3	1.0	3.0	5.2	7.4	9.5	c	11 5.22	306 8 " "	III A 41.300	22 10 44.90	−14 50 32.03	−15 6175
81	7.5	49.0	51.2	53.3	55.5	57.7	c	11 53.34	305 58 10.0 11.3	III C 44.260	22 11 33.02	15 9 17.16	−15 6180
82	8.3	58.9	1.2	3.2	5.5	7.6	c	13 3.28	305 58 " "	III A 43.430	22 12 42.94	14 59 51.42	15 6185
83	9.1	28.4	30.5	32.7	34.8	36.9	c	13 32.66	305 58 " "	III C 47.360	22 13 12.32	15 8 17.48	15 6189
84	9.5	31.5	33.7	35.8	38.0	40.0	c	14 35.80	306 18 10.0 11.2	III C 45.790	22 14 15.44	14 48 46.65	15 6192
85	9.4	11.2	13.4	15.3	17.4	19.2	e	14 45.73	306 18 " "	V A 42.120	22 14 25.37	−14 40 17.04	−14 6258

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
86	8.9	43.0	45.3	47.2	49.5	51.6	c	15 47.32	306 32 10.0 11.0	V 44.190	22 15 26.95	—14 28 51.92	—14 6262
87	8.2	2.5	4.6	6.7	8.9	11.0	c	18 6.74	306 16 10.0 11.6	III 49.970	22 17 46.35	14 42 59.81	14 6269
88	9.3	37.6	39.9	42.0	44.2	46.3	c	18 42.00	306 16 " "	III B 41.210	22 18 21.61	14 49 1.12	15 6209
89	8.9	57.8	59.8	2.0	4.2	6.3	c	20 2.02	306 28 10.0 11.5	III A 42.110	22 19 41.61	14 30 14.61	14 6277
90	8.9	20.4	22.5	24.6	26.8	29.0	c	21 24.66	306 28 " "	III B 40.040	22 21 4.22	—14 37 22.84	—14 6283
91	9.1	14.5	16.5	18.6	20.6	23.0	c	22 18.64	306 28 " "	III C 42.920	22 21 58.20	—14 39 40.38	—14 6286
92	9.0	18.7	21.0	23.2	25.2	27.5	c	23 23.12	305 42 10.0 11.5	III B 45.560	22 23 2.69	15 21 38.76	15 6228
93	8.6	13.3	15.5	17.2	19.1	21.4	a	24 47.06	305 42 " "	I 42.145	22 24 26.61	15 19 29.47	15 6230
94	8.8	47.3	49.2	51.0	52.9	55.0	a	25 20.84	305 42 " "	I 48.000	22 25 0.39	15 17 36.98	15 6232
95	9.0	34.0	36.0	38.2	40.4	42.5	c	25 38.22	305 20 10.0 11.0	III 48.330	22 25 17.77	15 39 33.37	15 6233
96	9.1	56.0	58.2	0.2	2.5	4.5	c	26 0.28	305 20 " "	V 50.800	22 25 39.83	15 38 47.28	15 6235
97	9.0	21.0	23.3	25.4	27.5	29.7	c	27 25.38	306 18 10.0 11.1	III 49.990	22 27 4.89	14 40 58.70	14 6303
98	8.5	52.4	54.4	56.3	58.0	0.5	a	29 26.12	305 20 10.0 11.0	I 52.890	22 29 5.63	15 38 4.00	15 6243
99	9.0	30.0	32.2	34.3	36.6	38.7	c	29 34.36	305 20 " "	III 49.780	22 29 13.87	15 39 5.21	15 6245
100	9.0	24.6	26.5	28.4	30.4	32.7	a	31 58.22	306 8 10.0 11.0	I 47.630	22 31 37.69	—14 51 42.60	—15 6248
101	9.0	11.3	13.6	15.7	17.9	20.0	c	32 15.70	305 30 10.0 10.8	III 48.375	22 31 55.19	—15 29 31.60	—15 6250
102	8.8	51.9	54.0	56.2	58.4	0.5	c	32 56.20	307 18 9.6 9.6	III 43.840	22 32 35.65	13 42 54.66	13 6230
103	8.0	51.5	53.6	55.7	57.8	59.9	c	34 55.70	305 56 10.0 10.4	III 46.630	22 34 35.15	15 4 3.93	15 6257
104	8.4	17.4	19.5	21.8	23.8	26.0	c	35 21.70	305 56 " "	III B 45.960	22 35 1.15	15 7 30.02	15 6258
105	7.5	45.0	46.9	48.7	50.6	52.9	a	39 18.55	305 52 10.0 10.7	I 46.170	22 38 57.96	15 8 10.94	15 6264
106	6.8	18.3	20.5	22.5	24.8	26.9	c	39 22.60	305 52 " "	III B 44.250	22 39 2.01	15 12 2.57	15 6265
107	9.1	19.2	21.4	23.4	25.7	27.8	c	40 23.50	306 16 10.0 11.4	III 46.380	22 40 2.89	14 44 6.94	14 6340
108	9.0	2.0	4.2	6.4	8.5	10.6	c	41 6.34	305 56 10.0 10.9	III 47.740	22 40 45.73	15 3 41.93	15 6272
109	8.7	1.8	3.9	5.8	7.6	9.9	a	45 35.55	305 44 10.0 11.0	I 47.740	22 45 14.90	15 15 40.64	15 6282
110	8.9	52.0	54.0	56.2	58.4	0.4	c	45 56.20	307 22 10.0 10.4	III 47.160	22 45 35.53	—13 37 49.28	—13 6284
111	9.0	3.8	5.8	8.0	10.2	12.3	c	47 8.02	306 2 10.0 10.0	III 47.490	22 46 47.36	—14 57 46.55	—15 6286
112	7.7	22.8	24.9	27.0	29.4	31.4	c	49 27.10	305 28 10.0 10.0	III 45.160	22 49 6.42	15 32 32.68	15 6294
113	9.3	7.7	9.7	12.0	14.2	16.3	c	50 11.98	305 28 " "	III 49.130	22 49 51.29	15 31 16.46	15 6298
114	7.8	28.9	31.0	33.2	35.3	37.6	c	51 33.20	305 28 " "	III 48.780	22 51 12.50	15 31 23.11	15 6305
115	9.1	14.0	16.1	18.1	20.5	22.5	c	52 18.24	305 38 10.0 10.7	III 49.520	22 51 57.53	15 21 8.06	15 6306
116	8.6	4.2	6.3	8.0	9.8	12.3	a	54 37.80	306 12 10.0 11.2	I 52.260	22 54 17.07	14 46 12.08	15 6314
117	8.5	46.2	48.3	50.5	52.7	54.7	c	54 50.48	306 12 " "	III 47.180	22 54 29.74	14 47 51.08	15 6315
118	8.4	46.4	48.5	50.6	52.9	55.0	c	55 50.68	306 12 " "	III 47.760	22 55 29.93	14 47 39.90	15 6321
119	7.5	24.5	26.7	28.8	31.0	33.0	c	56 28.80	306 12 " "	V 45.420	22 56 8.05	14 48 26.12	15 6325
120	8.1	44.3	46.4	48.5	50.7	52.8	c	57 48.54	306 12 " "	III 48.440	22 57 27.78	—14 47 26.79	—15 6332
121	9.4	55.3	57.4	59.5	1.7	8.0	c_1 d_1	58 59.54	306 26 10.0 11.5	III A 42.985	22 58 38.76	—14 31 55.26	—14 6398
122	8.6	25.6	27.7	29.8	32.0	34.0	c	59 29.82	306 26 " "	V C 45.620	22 59 9.04	14 40 47.39	14 6399
123	8.6	24.3	26.5	28.7	30.9	33.0	c	0 28.68	305 0 10.0 11.6	III (A) 42.400	23 0 7.90	15 58 10.33	16 6205
124	7.3	52.5	54.7	56.9	59.0	1.0	c	0 56.82	305 0 " "	III 48.260	23 0 36.03	15 59 33.22	16 6208
125	9.2	3.5	5.6	7.6	9.7	11.9	c	4 7.66	306 48 10.0 11.5	III B 45.810	23 3 46.85	14 15 28.57	14 6412
126	6.7	22.0	24.2	26.4	28.5	30.8	c	5 26.38	306 48 " "	III 48.910	23 5 5.56	14 11 15.76	14 6413
127	8.8	11.5	13.5	15.6	18.0	20.0	c	6 15.72	306 32 10.0 10.5	III 52.475	23 5 54.89	14 26 8.54	14 6417
128	9.4	43.2	45.4	47.6	49.8	51.8	c	6 47.56	306 32 " "	III C 51.010	23 6 26.72	14 33 2.83	14 6419
129	9.0	31.9	33.9	35.7	37.7	39.9	a	10 5.63	305 18 10.0 11.6	I 49.170	23 9 44.76	15 41 13.15	15 6376
130	7.3	23.0	25.1	27.2	29.3	31.5	c	10 27.22	306 26 10.0 10.5	III 47.840	23 10 6.36	—14 33 37.66	—14 6429
131	8.0	11.3	13.4	15.5	17.6	19.8	c	12 15.52	306 38 10.0 11.0	III 47.430	23 11 54.64	—14 21 44.73	—14 6437
132	6.8	59.3	1.4	3.5	5.8	7.9	c	13 3.58	306 38 " "	III 51.400	23 12 42.69	14 20 28.53	14 6441
133	9.1	24.0	26.2	28.3	30.5	32.5	c	13 28.30	306 38 " "	V B 44.420	23 13 7.41	14 25 57.30	14 6443
134	8.7	58.8	0.9	3.0	5.3	7.3	c	14 3.06	306 38 " "	III B 48.380	23 13 42.16	14 24 39.74	14 6447
135	.....	32.2	34.2	36.5	38.7	40.9	c	14 36.50	305 40 10.0 11.4	III 46.080	23 14 15.59	15 20 13.00	15 6395
136	5.5	41.3	43.4	45.6	47.8	49.9	c	17 45.60	305 24 10.0 11.4	III 48.990	23 17 24.67	15 35 17.87	15 6406
137	9.3	41.1	43.4	45.5	47.7	49.9	c	18 45.52	305 58 10.0 11.0	III 48.720	23 18 24.57	15 1 21.69	15 6411
138	8.6	12.9	15.2	17.2	19.0	21.0	e	18 47.43	305 58 " "	V 45.735	23 18 26.48	15 2 20.31	15 6412
139	9.3	27.7	29.7	31.6	33.4	35.6	a	21 1.30	306 6 10.0 10.9	I 45.400	23 20 40.34	14 54 23.55	15 6416
140	8.8	21.8	24.0	26.1	28.3	30.5	c	21 26.14	305 48 10.0 11.0	III B 46.060	23 21 5.17	—15 15 26.46	—15 6419
141	9.3	1.5	3.7	5.9	8.0	10.2	c	22 5.86	305 48 " "	III A 41.980	23 21 44.89	—15 10 16.11	—15 6423
142	8.5	0.4	2.6	4.6	6.7	8.9	c	24 4.64	306 8 10.0 11.0	III 47.540	23 23 43.65	14 51 43.87	15 6433
143	8.3	31.8	33.9	36.0	38.3	40.4	c	26 36.08	305 44 10.0 10.4	III 50.370	23 26 15.07	15 14 50.95	15 6443
144	7.8	49.6	51.9	53.8	56.2	58.3	c	26 53.96	305 44 " "	V C 49.710	23 26 32.95	15 21 30.98	15 6444
145	8.8	24.6	26.7	28.9	31.0	33.0	c	28 28.84	306 18 10.0 11.5	III 46.390	23 28 7.81	14 42 5.28	14 6487
146	8.0	11.5	13.6	15.7	17.9	20.0	c	29 15.74	306 18 " "	III B 41.420	23 28 54.71	14 46 53.95	15 6455
147	8.9	30.6	32.7	35.0	37.0	39.1	c	32 34.88	306 14 10.0 11.3	III 46.040	23 32 13.82	14 46 12.33	15 6462
148	9.0	27.7	29.8	31.9	34.0	36.3	c	33 31.94	305 50 10.0 10.4	III 47.480	23 33 10.87	15 9 46.26	15 6465
149	5.2	52.7	54.8	57.0	59.2	1.3	c	34 57.00	306 14 10.0 11.0	III 45.160	23 34 35.92	14 46 29.43	15 6471
150	7.5	55.6	57.8	0.0	2.3	4.3	c	39 0.00	305 10 10.0 11.3	V 45.960	23 38 38.88	—15 50 18.34	—16 6352
151	8.8	16.9	19.0	21.2	23.5	25.6	c	41 21.24	305 56 10.0 10.8	III 49.140	23 41 0.11	—15 3 14.12	—15 6495
152	9.1	31.9	33.9	36.0	38.3	40.5	c	42 36.12	305 56 " "	III B 48.290	23 42 14.98	15 6 43.76	15 6497
153	9.0	42.4	44.7	46.7	48.9	51.0	c	43 46.74	305 38 10.0 11.1	III B 47.960	23 43 25.59	15 24 50.83	15 6500
154	8.8	19.2	21.5	23.5	25.7	27.8	c	44 23.54	305 38 " "	III C 46.650	23 44 2.38	15 28 28.89	15 6501
155	8.6	47.9	49.9	52.1	54.4	56.5	c	44 52.16	305 38 " "	V A 42.930	23 44 31.00	15 20 0.24	15 6502
156	6.0	38.7	40.8	42.9	45.0	47.3	c	47 42.94	306 12 10.0 11.2	III 45.300	23 47 21.75	14 48 27.12	15 6515
157	8.7	38.2	40.2	42.4	44.5	46.6	c	50 42.38	306 42 10.0 10.8	III 45.140	23 50 21.18	14 18 29.18	14 6577
158	9.1	6.6	8.7	10.8	13.0	15.1	c	53 10.84	305 46 10.0 11.2	III 46.790	23 52 49.60	15 13 59.98	15 6524
159	8.6	32.9	34.9	37.0	39.3	41.4	c	55 37.10	305 58 10.0 10.6	III 44.160	23 55 15.85	—15 2 50.33	—15 6528

Reduction Elements. Zone 141.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 2. 3....	−0. 121	−0. 088	−0. 553	−0. 070	−0. 038	−0. 553
2. 5....	−0. 020	+0. 013				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	f Sagittarii		*β* Capricorni		*ρ* Capricorni		*υ* Capricorni		Mayer 974		*ω*² Aquarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	301 2 10. 70		305 56 10. 85		302 52 10. 50		302 32 10. 80		312 58 10. 80		305 54 10. 55	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42. 730	4 52. 92	42. 260	4 44. 40	46. 265	6 2. 44	43. 730	5 13. 71	48. 660	6 48. 36	47. 090	6 17. 65
II Red. to Mer......	. 790	0. 20	. 210	0. 15	. 335	0. 18	. 800	0. 18	. 730	0. 08	. 110	0. 15
VI Inclination		1. 68	. 380		. 460		. 920		. 875		. 245	
VII Refraction.......		1 34. 4	. 410	1 18. 6	. 480	1 28. 1	. 925	1 29. 4	. 855	1 1. 6	. 265	1 19. 2

	*ι*² Aquarii		2 Ceti	
	° ′ ″		° ′ ″	
CIRCLE READING.	301 32 10. 20		303 6 10. 05	
	r	′ ″	r	′ ″
I Microm. Eq......	47. 640	6 28. 69	48. 590	6 46. 60
II Red. to Mer......	. 690	0. 19	. 610	0. 18
VI Inclination	. 840		. 780	
VII Refraction.......	. 845	1 33. 4	. 770	1 28. 0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
λ Ursae Minoris.....	19 27 23. 65	4	+18. 55	[−32. 03]	50 2	....
f Sagittarii.........	19 40 50. 24	11	− 0. 60	−32. 00	301 5 31. 1	19. 1
β Capricorni.........	20 15 42. 82	11	− 0. 56	−32. 07	305 59 36. 8	17. 7
ρ Capricorni.........	20 23 28. 43	11	− 0. 58	−31. 95	302 56 45. 0	18. 1
υ Capricorni.........	20 34 40. 63	11	− 0. 59	−32. 02	302 35 55. 3	19. 1
Mayer 974.........	23 30 43. 54	11	− 0. 51	−32. 04	313 3 57. 6	18. 9
*ω*² Aquarii..........	23 37 53. 30	11	− 0. 56	−32. 05	305 59 9. 2	18. 5
*ι*² Aquarii..........	23 46 32. 74	11	− 0. 60	−32. 01	301 37 5. 7	18. 3
2 Ceti..............	23 58 58. 37	11	− 0. 58	−32. 04	303 11 28. 8	19. 3

h 20. 228..........*dt*.................... s −32. 010

Hourly rate........... − 0. 0071

Adopted Equator Point.........321° 6′ 18″. 62

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 36	29. 956	61. 9	59. 3
20 16	29. 958	60. 8	58. 2
20 55	29. 958	59. 5	57. 0
21 57	29. 942	58. 0	55. 4
23 1	29. 918	56. 2	54. 4
0 0	29. 914	55. 5	53. 4

Notes.

3. Images somewhat unsteady.
20. Double, mean observed.
150. Reddish.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
304	−0. 574
305	0. 567
306	0. 559
307	0. 551
308	−0. 543

APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0					*D* = Z. D. N. to 1895.0				
	304°	305°	306°	307°	308°	304°	305°	306°	307°	308°
h m	s	s	s	s	s	″	″	″	″	″
20 0	......	+13. 609	+13. 528	+13. 445	......	.....	− 3. 29	− 3. 63	− 3. 97	.....
20 30	+13. 390	13. 317	13. 245	13. 172	......	− 5. 76	6. 09	6. 40	6. 72	.....
21 0	13. 078	13. 016	12. 953	12. 891	......	8. 61	8. 91	9. 21	9. 50	.....
21 30	+12. 759	12. 709	12. 660	12. 610	+12. 560	−11. 44	11. 72	12. 00	12. 26	−12. 54
22 0	......	12. 404	12. 366	12. 329	12. 292	.....	14. 45	14. 69	14. 93	15. 17
22 30	......	12. 104	12. 081	12. 056	12. 032	.....	17. 06	17. 27	17. 48	17. 68
23 0	......	11. 816	11. 805	11. 795	+11. 785	.....	19. 52	19. 70	19. 87	−20. 04
23 30	......	11. 542	11. 546	11. 550	......	.....	21. 77	21. 91	22. 04	.....
0 0	......	+11. 291	+11. 309	+11. 326	......	.....	−23. 78	−23. 88	−23. 98	.....

APPARENT RIGHT ASCENSION.	*R*			
	304° 30′	305° 30′	306° 30′	307° 30′
h m	″	″	″	″
20 0	83. 10	80. 08	77. 22	74. 47
20 30	83. 25	80. 22	77. 36	74. 61
21 0	83. 41	80. 37	77. 50	74. 75
21 30	83. 50	80. 46	77. 59	74. 83
22 0	83. 58	80. 54	77. 66	74. 90
22 30	83. 66	80. 61	77. 73	74. 97
23 0	83. 71	80. 67	77. 79	75. 02
23 30	83. 77	80. 72	77. 84	75. 08
0 0	83. 83	80. 78	77. 89	75. 13

1895 OCTOBER 4. ZONE 142. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.1	20.7	22.8	24.7	26.5	28.7	a	49 54.61	304 34 10.0 11.3	I B 43.360	20 49 33.56	−16 30 35.44	−16 5725
2	9.0	35.1	37.3	39.2	41.0	43.3	a	50 9.10	304 34 “ “	III 48.660	20 49 48.04	16 25 42.12	16 5728
3	6.8	26.1	28.2	30.4	32.7	34.8	c	50 30.44	303 30 10.0 10.9	III 49.060	20 50 9.44	17 29 37.59	17 6127
4	7.5	48.2	50.2	52.3	54.6	56.8	c	50 52.42	303 30 “ “	V C 44.545	20 50 31.42	17 37 31.50	17 6129
5	8.8	34.9	37.0	39.3	41.4	43.6	c	51 39.24	303 6 10.0 11.4	V 47.850	20 51 18.25	17 54 2.80	18 5811
6	8.7	0.6	2.8	5.0	7.2	9.4	c	53 5.00	303 42 10.0 10.4	III B 38.690	20 52 43.97	17 24 8.97	17 6137
7	8.2	7.0	9.2	11.4	13.6	15.7	c	54 11.38	303 42 “ “	III A 43.770	20 53 50.33	17 16 2.60	17 6140
8	8.8	38.6	40.7	42.8	45.0	47.2	c	54 42.86	303 20 10.0 10.0	V 45.830	20 54 21.82	17 40 40.92	17 6144
9	9.3	7.0	9.2	11.5	13.7	15.8	c	57 11.44	303 6 10.0 10.0	III B 40.070	20 56 50.39	17 59 43.55	18 5840
10	7.5	59.4	1.5	3.5	5.8	8.0	c	58 3.64	303 6 “ “	III A 44.570	20 57 42.58	−17 51 48.32	−18 5844
11	9.0	1.0	3.2	5.4	7.6	9.7	c	59 5.38	303 6 “ “	III 42.440	20 58 44.31	−17 55 44.38	−18 5851
12	5.0	36.3	38.5	40.7	42.9	44.9	c	0 40.66	303 24 10.0 11.5	III 42.110	21 0 19.56	17 37 48.73	17 6174
13	6.8	24.4	26.6	28.8	31.0	33.0	c	2 28.76	303 16 10.0 11.5	III C 44.770	21 2 7.65	17 51 23.88	18 5862
14	9.4	23.0	25.2	27.2	29.5	31.7	c	3 27.32	303 16 “ “	III A 46.440	21 3 6.18	17 41 10.05	17 6191
15	9.2	7.5	9.4	11.4	13.4	15.7	a	4 41.60	303 16 “ “	I A 50.130	21 4 20.46	17 39 57.28	17 6195
16	9.0	54.5	56.5	58.4	0.3	2.7	a	5 28.63	303 8 10.0 11.1	I 44.860	21 5 7.48	17 52 54.42	18 5878
17	9.4	16.2	18.5	20.8	22.8	25.0	c	7 20.66	303 32 10.0 10.8	III A 45.895	21 6 59.48	17 25 19.33	17 6203
18	9.0	36.8	38.8	40.9	43.4	45.4	c	7 41.06	303 32 “ “	III C 44.850	21 7 19.88	17 35 20.88	17 6206
19	9.1	50.4	52.6	54.7	57.0	59.2	c	8 54.78	303 20 10.0 10.6	III 44.410	21 8 33.58	17 41 3.58	17 6213
20	9.1	27.1	29.3	31.3	33.5	35.6	c	9 31.36	303 20 “ “	III A 43.990	21 9 10.16	−17 37 56.10	−17 6214
21	6.0	47.8	49.9	52.2	54.5	56.5	c	9 52.18	303 20 “ “	V B 40.540	21 9 30.98	−17 45 32.48	−17 6216
22	9.2	39.2	41.3	43.5	45.6	47.9	c	11 43.50	303 20 “ “	III 47.770	21 11 22.28	17 39 58.53	17 6224
23	7.9	56.8	58.8	1.1	3.3	5.4	c	13 1.08	303 6 10.0 10.5	III A 40.970	21 12 39.85	17 52 54.15	18 5904
24	9.3	14.9	17.1	19.2	21.5	23.7	c	13 19.28	303 6 “ “	V B 47.960	21 12 58.05	17 57 10.16	18 5905
25	9.1	19.6	21.7	23.9	26.2	28.4	c	14 23.96	303 48 10.0 11.0	III 47.830	21 14 2.68	17 11 55.32	17 6237
26	9.0	55.4	56.9	1.3	3.5	5.7	b_2 c_3	15 5.64	303 34 10.0 11.0	III 47.610	21 14 44.36	17 26 0.09	17 6239
27	5.	27.9	30.0	32.2	34.1	36.0	e	17 2.08	303 44 10.0 10.9	V 48.760	21 16 40.77	17 15 38.56	17 6245
28	9.2	5.0	7.3	9.3	11.7	13.8	c	23 9.42	303 24 10.0 11.6	III C 50.290	21 22 48.06	17 41 33.53	17 6288
29	9.1	11.8	13.9	16.2	18.4	20.6	c	25 16.18	303 24 “ “	III 47.940	21 24 54.80	17 35 52.04	17 6299
30	8.9	58.7	0.9	3.0	5.4	7.3	c	26 3.06	303 24 “ “	III C 49.140	21 25 41.67	−17 41 55.10	−17 6302
31	9.0	42.8	44.8	46.8	48.7	51.0	a	29 16.86	303 50 10.0 9.7	I 42.960	21 28 55.41	−17 11 25.10	−17 6312
32	9.1	56.0	58.0	0.0	1.9	4.2	a	29 30.06	303 50 “ “	I 44.190	21 29 8.61	17 11 1.47	17 6313
33	8.9	33.3	35.5	37.7	39.9	42.0	c	29 37.68	303 50 “ “	III 45.720	21 29 16.23	17 10 33.62	17 6315
34	8.9	12.0	14.2	16.5	18.6	20.8	c	31 16.42	303 50 “ “	III 49.150	21 30 54.95	17 9 27.52	17 6321
35	8.1	41.0	43.1	45.4	47.6	49.7	c	32 45.36	303 22 10.0 10.4	III 42.815	21 32 23.90	17 39 29.84	17 6329
36	8.8	19.0	21.3	23.4	25.6	27.8	c	33 23.42	303 42 10.0 10.5	III 45.040	21 33 1.94	17 18 46.03	17 6333
37	8.4	42.2	44.4	46.6	48.8	51.0	c	36 46.60	303 16 10.0 11.0	III A 47.545	21 36 25.09	17 40 43.03	17 6349
38	8.5	17.9	19.9	22.0	24.3	26.6	c	38 22.14	303 16 “ “	III C 46.800	21 38 0.62	17 50 38.66	18 5998
39	8.2	22.7	24.8	27.0	29.2	31.3	c	42 27.00	303 16 10.5 11.1	III 42.800	21 42 5.43	17 45 28.31	17 6373
40	9.4	58.7	0.8	3.0	5.4	7.6	c	45 3.10	303 16 “ “	III B 48.950	21 44 41.50	−17 46 43.17	−17 6388
41	9.0	28.9	31.2	33.3	35.5	37.7	c	47 33.32	303 28 10.0 11.0	III 46.880	21 47 11.69	−17 32 8.95	−17 6397
42	9.2	50.4	52.7	54.7	56.9	59.2	c	48 54.78	303 28 “ “	III C 48.830	21 48 33.14	17 37 57.54	17 6401
43	8.0	13.8	16.0	18.0	20.3	22.5	c	54 18.12	303 12 10.0 10.1	III 49.680	21 53 56.42	17 47 15.52	17 6412
44	7.8	7.4	9.6	11.7	13.9	16.0	c	55 11.72	303 12 “ “	III B 45.150	21 54 50.01	17 51 55.66	18 6052
45	9.4	49.0	51.2	53.0	54.8	57.2	a	56 23.20	303 12 “ “	I C 46.665	21 56 1.48	17 54 37.94	18 6054
46	9.1	34.5	36.8	39.0	41.3	43.4	c	56 39.00	303 12 “ “	III C 41.970	21 56 17.28	17 56 9.40	18 6055
47	8.8	16.3	18.4	20.2	22.1	24.4	a	57 50.44	303 12 “ “	I C 46.670	21 57 28.70	17 54 37.67	18 6059
48	9.3	0.6	2.6	4.4	6.2	8.7	a	58 34.64	303 12 “ “	I A 41.810	21 58 12.89	17 46 28.90	17 6429
49	9.2	15.3	17.6	19.7	22.0	24.0	c	8 19.72	303 22 10.0 10.6	III C 50.090	22 7 57.85	17 43 31.40	17 6464
50	9.1	49.8	51.8	54.0	56.2	58.3	c	9 54.02	303 22 “ “	III 45.870	22 9 32.14	−17 38 26.02	−17 6469
51	8.3	7.7	10.0	12.1	14.4	16.5	c	11 12.14	303 22 “ “	III B 44.210	22 10 50.24	−17 42 11.03	−17 6478
52	8.9	48.8	51.0	53.2	55.6	57.7	c	11 53.26	303 32 10.0 10.9	III 44.200	22 11 31.35	17 28 57.22	17 6481
53	9.2	50.6	52.7	54.9	57.1	59.4	c	18 54.94	303 14 10.0 10.7	III 48.070	22 18 32.96	17 45 43.23	17 6511
54	8.8	45.5	47.7	49.9	52.2	54.4	c	19 49.94	303 24 10.0 11.3	III 49.640	22 19 27.94	17 35 12.18	17 6515
55	9.0	9.6	11.9	14.0	16.3	18.4	c	21 14.04	303 14 10.0 10.5	III B 41.210	22 20 52.03	17 51 8.07	18 6120
56	8.0	56.8	59.0	1.1	3.4	5.7	c	22 1.20	303 14 “ “	III 46.630	22 21 39.18	17 46 10.70	17 6526
57	8.2	42.9	45.0	47.2	49.6	51.7	c	22 47.28	303 14 “ “	III 44.560	22 22 25.26	17 46 50.36	18 6129
58	8.2	22.0	24.3	26.5	28.7	30.9	c	30 26.48	303 14 “ “	III 45.660	22 30 4.37	17 46 28.59	18 6151
59	9.0	44.4	46.5	48.6	50.9	53.0	c	37 48.68	303 6 10.0 11.0	III 44.120	22 37 26.50	17 54 57.79	18 6174
60	9.1	31.6	33.7	35.9	38.1	40.1	c	41 35.88	303 30 10.0 10.4	III B 43.810	22 41 13.66	−17 34 15.88	−17 6590
61	9.0	32.8	34.9	37.2	39.3	41.6	c	42 37.16	303 30 “ “	III B 40.650	22 42 14.92	−17 35 16.47	−17 6592
62	7.9	51.2	53.5	55.7	57.8	0.0	c	43 55.64	303 30 “ “	III 42.640	22 43 33.39	17 31 24.90	17 6598
63	8.0	25.5	27.7	29.8	32.0	34.3	c	47 29.86	303 48 10.0 11.4	III 49.320	22 47 7.57	17 11 15.11	17 6615
64	8.2	13.2	15.4	17.5	19.8	22.0	c	48 17.58	303 18 10.0 11.1	III 47.650	22 47 55.28	17 41 48.79	17 6616
65	9.2	49.2	51.4	53.6	55.8	58.0	c	48 53.60	303 18 “ “	V C 46.770	22 48 31.30	17 48 33.01	18 6212
66	9.1	13.0	15.1	17.3	19.6	21.8	c	50 17.36	303 18 “ “	III B 42.790	22 49 55.04	17 46 35.27	18 6217
67	9.2	57.0	59.1	0.9	2.9	5.2	a	52 31.11	303 30 10.0 10.5	I 48.245	22 52 8.76	17 29 35.32	17 6628
68	9.3	39.9	42.0	44.3	46.4	48.7	c	52 44.26	303 22 10.0 11.0	III 46.200	22 52 21.90	17 38 16.27	17 6631
69	8.1	11.4	13.5	15.9	18.0	20.1	c	54 15.78	303 22 “ “	III B 45.450	22 53 53.41	17 41 43.89	17 6638
70	8.0	51.5	53.6	55.7	58.0	0.1	c	55 55.78	303 34 10.0 10.8	III 49.980	22 55 33.40	−17 25 2.99	−17 6646

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
71	6.5	43.7	45.8	47.6	49.6	52.0	a	0 17.86	303 30 10.0 10.6	I C	45.030	22 59 55.42	−17 37 3.09	−17 6661
72	7.8	22.1	24.2	26.5	28.8	31.0	c	0 26.52	303 30 “ “	III A	48.500	23 0 4.09	17 26 16.27	17 6663
73	8.0	20.1	22.3	24.4	26.7	28.8	c	3 24.46	303 42 10.0 10.5	III	48.840	23 3 2.00	17 17 24.51	17 6682
74	8.9	36.3	38.5	40.3	42.2	44.6	a	5 10.35	304 16 10.0 10.0	I	47.420	23 4 47.88	16 43 48.74	16 6224
75	9.3	12.5	14.6	16.8	19.0	21.0	c	5 16.78	304 16 “ “	III A	43.250	23 4 54.30	16 41 54.92	16 6225
76	8.9	27.0	29.2	31.2	33.4	35.7	c	6 31.30	304 16 “ “	III B	46.060	23 6 8.80	16 47 29.65	17 6692
77	9.0	47.9	50.0	52.3	54.4	56.6	c	6 52.24	304 16 “ “	III A	41.640	23 6 29.74	16 42 25.81	16 6236
78	9.3	24.0	26.2	28.5	30.6	32.7	c	7 28.40	303 20 10.0 10.1	V	48.365	23 7 5.90	17 39 36.20	17 6698
79	9.2	43.0	45.3	47.4	49.8	52.0	c	8 47.50	303 32 10.0 10.0	III	46.930	23 8 24.98	17 28 1.84	17 6703
80	7.3	19.6	21.8	23.9	26.2	28.3	c	9 23.96	303 32 “ “	III	49.520	23 9 1.44	−17 27 12.12	−17 6705
81	9.4	42.5	44.6	46.8	49.1	51.2	c	10 46.84	303 32 “ “	III A	45.330	23 10 24.30	−17 25 16.12	−17 6715
82	8.2	52.8	55.0	57.2	59.4	1.5	c	11 57.18	303 10 10.0 11.1	III	47.875	23 11 34.62	17 49 44.24	18 6279
83	8.6	34.8	37.0	39.0	41.4	43.6	c	16 39.16	303 34 10.0 10.8	III	48.780	23 16 16.56	17 25 25.76	17 6734
84	8.9	22.0	24.1	26.3	28.6	30.9	c	17 26.38	303 20 10.0 10.4	III	52.050	23 17 3.78	17 38 23.90	17 6739
85	9.3	52.7	54.9	57.0	59.4	1.4	c	17 57.08	303 20 “ “	III B	45.960	23 17 34.46	17 43 34.10	17 6741
86	9.0	28.2	30.3	32.5	34.7	36.8	c	19 32.50	303 8 10.0 10.0	III	46.750	23 19 9.87	17 52 6.45	18 6299
87	9.2	55.8	57.9	0.0	2.2	4.5	c	25 0.08	303 8 “ “	III A	45.630	23 24 37.39	17 49 12.60	18 6317
88	9.3	19.7	21.8	24.0	26.2	28.3	c	27 24.00	303 16 10.0 10.7	III	46.770	23 27 1.29	17 44 5.38	17 6766
89	8.0	22.8	25.0	27.0	29.0	30.8	e	27 56.94	303 36 10.0 10.9	V	48.650	23 27 34.23	17 23 29.54	17 6769
90	9.3	31.6	33.8	36.0	38.1	40.3	c	29 35.96	303 26 10.0 10.2	III C	48.745	23 29 13.24	−17 39 53.49	−17 6775
91	7.9	12.0	14.1	16.2	18.1	20.0	e	29 46.08	303 26 “ “	V	50.310	23 29 23.36	−17 32 58.58	−17 6776
92	7.5	4.5	6.6	8.7	10.7	12.6	e	30 38.68	303 52 10.0 10.7	V	46.580	23 30 15.95	17 8 8.62	17 6779
93	9.0	48.8	51.0	53.2	55.4	57.5	c	31 53.18	303 12 10.0 10.6	V	48.880	23 31 30.43	17 47 26.59	18 6342
94	9.2	51.0	53.0	55.2	57.4	59.6	c	34 55.24	303 24 10.0 10.3	III	48.130	23 34 32.46	17 35 39.25	17 6788
95	9.0	13.0	15.1	17.4	19.6	21.8	c	37 17.38	304 10 10.0 10.0	III	49.385	23 36 54.59	16 49 13.05	17 6799
96	9.1	1.2	3.4	5.5	7.8	9.9	c	39 5.56	303 38 10.0 10.0	III	45.000	23 38 42.74	17 22 38.89	17 6807
97	7.8	12.9	15.0	17.2	19.4	21.6	c	41 17.22	303 20 10.0 10.2	III	42.520	23 40 54.37	17 41 27.39	17 6814
98	9.0	15.7	17.7	19.9	22.2	24.3	c	42 19.96	303 20 “ “	III	49.290	23 41 57.10	17 39 17.50	17 6816
99	7.5	18.6	20.8	23.0	25.3	27.5	c	43 23.04	303 44 10.0 10.0	III	49.480	23 43 0.18	17 15 12.76	17 6819
100	9.1	20.8	23.0	25.0	27.3	29.5	c	45 25.12	303 4 10.0 10.7	III	47.360	23 45 2.22	−17 55 55.28	−18 6378
101	9.3	54.3	56.6	58.7	1.0	3.0	c	46 58.72	303 40 10.0 10.0	III C	48.130	23 46 35.83	−17 26 5.25	−17 6832
102	9.0	59.5	1.6	3.9	6.0	8.2	c	48 3.84	303 40 “ “	III A	48.435	23 47 40.94	17 16 17.84	17 6837
103	9.0	45.4	47.5	49.7	51.8	53.9	c	51 49.66	303 10 10.0 10.3	III	48.940	23 51 26.71	17 49 25.13	18 6403
104	9.3	36.6	38.8	41.0	43.2	45.3	c	53 40.98	303 10 “ “	III A	46.270	23 53 18.01	17 47 1.09	18 6405
105	4.	55.7	57.9	0.0	2.2	4.4	c	59 0.04	303 10 “ “	III B	46.110	23 58 37.02	17 53 33.21	18 6417
106	8.6	5.2	7.2	9.5	11.6	13.7	c	0 9.44	303 36 10.0 10.5	III	45.160	23 59 46.43	17 24 36.75	17 6870
107	9.0	.....	.....	.....	.....	.....	.....	.....	303 42 10.0 9.4	III	48.150	0 1 20	17 17 39.69	17 6875
108	9.1	44.0	46.0	48.4	50.5	52.6	c	4 48.30	303 10 10.0 9.5	III	43.700	0 4 25.23	17 51 6.95	18 6
109	9.2	10.5	12.7	14.9	17.1	19.2	c	5 14.88	303 10 “ “	III A	42.480	0 4 51.80	17 48 15.01	18 7
110	8.8	14.5	16.6	18.8	20.9	23.0	c	7 18.76	303 38 10.0 9.7	III	46.530	0 6 55.69	−17 22 11.25	−17 14
111	8.4	43.8	45.8	48.2	50.4	52.6	c	9 48.16	303 46 10.0 9.8	III	48.175	0 9 25.07	−17 13 39.41	−17 20
112	7.9	29.8	32.0	34.2	36.4	38.5	c	10 34.18	303 46 “ “	III B	42.525	0 10 11.08	17 18 41.24	17 24
113	9.2	45.5	47.8	49.8	52.0	54.2	c	19 49.86	304 18 10.0 10.5	III B	41.890	0 19 26.69	16 46 52.22	17 55
114	9.1	46.7	49.0	51.0	53.2	55.5	c	20 51.08	304 18 “ “	III	49.280	0 20 27.92	16 41 17.20	16 65
115	9.2	15.8	18.0	20.2	22.5	24.5	c	21 20.20	304 18 “ “	III B	48.240	0 20 57.02	−16 44 51.50	−17 57

Reduction Elements. Zone 142.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 4.3....	−0.200	−0.091		−0.174	−0.076	−0.684
4.5....	−0.148	−0.060	−0.684			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ε Aquarii		16 Aquarii		ζ Capricorni		γ Capricorni		ι Ceti		9 Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	311 8 10.50		316 2 10.50		298 10 10.25		303 54 10.30		311 38 9.55		308 14 9.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	47.860	6 32.23	42.735	4 54.46	46.340	6 3.98	44.700	5 31.83	43.910	5 16.52	46.615	6 8.52
II Red. to Mer......	.870	0.10	.810	0.05	.430	0.23	.710	0.17	.920	0.09	.640	0.13
VI Inclination	48.000		.920		.530		.855		44.035		.785	
VII Refraction.......	.020	1 4.8	.895	54.8	.560	1 45.6	.890	1 24.4	.095	1 4.5	.770	1 12.7

	Lalande 628		22 Ceti	
	° ′ ″		° ′ ″	
CIRCLE READING.	300 8 9.60		309 12 11.00	
	r	′ ″	r	′ ″
I Microm. Eq......	44.280	5 23.96	44.905	5 35.71
II Red. to Mer......	.330	0.21	.920	0.12
VI Inclination	.425		45.080	
VII Refraction.......	.475	1 38.5	.060	1 10.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Aquarii	20 42 37.15	11	−0.75	−33.44	311 13 38.0	16.9
16 Aquarii	21 16 11.68	11	−0.71	−33.51	316 6 10.2	17.0
ζ Capricorni	21 21 18.59	11	−0.88	−33.39	298 14 28.8	17.7
γ Capricorni	21 34 54.51	11	−0.82	−33.40	303 58 17.9	17.4
ι Ceti	0 14 42.91	11	−0.74	−33.54	311 42 21.7	18.5
9 Ceti	0 18 7.23	11	−0.78	−33.46	308 19 5.7	18.1
Lalande 628	0 23 43.55	11	−0.86	−33.40	300 11 55.3	17.0
22 Ceti	0 51 23.80	11	−0.77	−33.50	309 16 36.5	16.8
43 H. Cephei	0 55 9.54	9	+3.64	[−33.50]	46 46	....

h		s
21.228	*dt*	−33.435
	Hourly rate	− 0.0124
		° ′ ″
	Adopted Equator Point	321 6 17.42

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
20 43	29.856	61.6	60.1
21 46	29.854	59.8	58.2
22 45	29.850	58.6	56.6
23 48	29.846	56.8	54.3
0 21	29.842	56.0	53.6
0 46	29.842	56.0	53.4

Notes.

57. Observed preceding and brighter.

100. Images quite steady.

Lalande 628. Seeing very good.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			$D =$ Z. D. N. to 1895.0			R		
			303°	304°	305°	303°	304°	305°	303°	304°	305°
°	s	h m	s	s	s	″	″	″	″	″	″
303	−0.830	20 30	+13.507	+13.432	+13.358	− 5.36	− 5.68	− 6.00	87.30	84.08	81.00
304	0.819	21 0	13.179	13.117	13.055	8.19	8.49	8.79	87.44	84.22	81.13
305	−0.809	21 30	12.845	12.793	12.744	11.02	11.30	11.58	87.60	84.37	81.28
		22 0	12.508	12.471	12.434	13.79	14.04	14.29	87.74	84.51	81.41
		22 30	12.177	12.153	12.129	16.45	16.67	16.89	87.88	84.64	81.55
		23 0	11.853	11.844	11.835	18.95	19.14	19.33	88.04	84.80	81.70
		23 30	11.547	11.552	11.556	21.27	21.42	21.57	88.23	84.98	81.87
		0 0	11.261	11.279	11.298	23.36	23.46	23.57	88.37	85.11	82.00
		0 30	+10.999	+11.031	+11.065	−25.15	−25.22	−25.29	88.45	85.19	82.07

1895 OCTOBER 8. ZONE 143. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	10.0	53.5	55.5	57.6	59.7	1.8	e	5 27.77	304 26 10.0 10.4	VII	45.230	21 5 3.45	−16 34 48.27	−16 5811
2	9.2	47.0	49.3	51.4	53.5	55.6	c	7 51.36	306 38 10.0 10.7	III	41.810	22 7 26.29	14 23 35.22	14 6231
3	7.8	4.1	6.2	8.4	10.6	12.7	c	8 8.40	306 38 " "	V	47.150	22 7 43.33	14 21 54.06	14 6233
4	9.1	26.8	29.1	31.3	33.6	35.7	c	9 31.30	304 56 10.0 10.2	III	46.400	22 9 6.26	16 4 11.76	16 6045
5	7.8	12.9	15.0	16.8	18.8	20.9	a	11 46.66	305 32 10.0 10.0	I	47.750	22 11 21.58	15 27 42.53	15 6178
6	9.0	52.6	54.7	56.9	59.1	1.2	c	11 56.90	305 20 9.6 9.5	III	44.450	22 11 31.82	15 40 48.36	15 6179
7	9.1	27.5	29.8	31.9	34.0	36.2	c	13 31.88	304 56 10.0 10.5	III C	49.890	22 13 6.80	16 9 30.38	16 6060
8	8.9	7.3	9.4	11.2	13.1	15.4	a	14 41.14	304 56 " "	I A	43.690	22 14 16.05	16 1 45.95	16 6063
9	9.0	6.7	8.9	10.9	13.0	15.3	c	15 10.96	305 44 10.0 9.7	III	45.120	22 14 45.84	15 16 33.74	15 6195
10	8.6	58.8	0.9	2.9	5.1	7.4	c	16 3.02	305 36 10.0 10.1	III	42.780	22 15 37.89	−15 25 18.75	−15 6197
11	8.9	14.8	17.0	19.0	21.3	23.5	c	16 19.12	305 36 " "	V B	42.600	22 15 53.99	−15 28 36.98	−15 6198
12	9.2	6.4	8.6	10.7	12.9	15.0	c	17 10.72	305 36 " "	III A	42.370	22 16 45.58	15 22 11.14	15 6202
13	8.9	19.0	21.1	23.3	25.5	27.6	c	18 23.30	305 36 " "	III B	47.315	22 17 58.15	15 27 4.74	15 6208
14	9.3	2.8	4.9	7.1	9.2	11.5	c	19 7.10	305 22 9.2 9.5	III	48.140	22 18 41.95	15 37 36.90	15 6211
15	8.5	58.6	0.6	2.8	4.9	7.0	c	21 2.78	305 32 10.0 10.5	III	48.170	22 20 37.61	15 27 34.79	15 6221
16	7.5	16.8	18.9	21.0	23.3	25.4	c	25 21.08	305 54 9.8 9.5	III	47.360	22 24 55.85	15 5 49.56	15 6231
17	8.2	57.3	59.5	1.6	3.7	5.8	c	26 1.58	305 54 " "	III A	40.570	22 25 36.34	15 4 44.44	15 6234
18	9.0	30.3	32.7	34.8	37.1	39.2	c	26 34.82	305 4 10.0 10.3	V	46.180	22 26 9.59	15 56 15.21	16 6099
19	9.1	32.4	34.5	36.8	38.9	41.1	c	27 36.74	305 32 10.5 10.8	III A	43.280	22 27 11.49	15 25 52.27	15 6240
20	9.4	8.4	10.6	12.6	14.5	16.4	e	27 42.80	305 32 " "	V B	45.850	22 27 17.55	−15 31 33.15	−15 6241
21	9.3	1.5	3.7	5.7	7.9	10.0	c	32 5.76	305 52 10.0 10.3	III	43.570	22 31 40.46	−15 9 1.31	−15 6249
22	9.1	31.0	33.0	35.2	37.4	39.4	c	33 35.20	306 24 10.0 10.1	III A	40.600	22 33 9.88	14 34 41.52	14 6319
23	8.0	5.5	7.8	9.7	11.7	13.5	e	33 40.08	306 24 " "	VII A	39.100	22 33 14.76	14 35 13.11	14 6320
24	9.3	6.8	8.7	10.6	12.4	......	a	33 40.30	306 24 " "	I A	44.400	22 33 14.98	14 33 26.88	14 6321
25	9.3	......	52.6	54.5	56.3	58.7	a	40 24.43	304 52 10.0 10.1	III (C)	45.860	22 39 59.06	16 14 45.86	16 6147
26	8.0	29.0	31.0	33.3	35.5	37.5	c	40 33.26	304 52 " "	V A	41.560	22 40 7.89	16 6 28.27	16 6149
27	9.5	0.4	2.5	4.6	6.8	9.0	c	41 4.66	304 52 " "	V A	40.280	22 40 39.29	16 6 52.84	16 6150
28	8.9	39.0	41.0	43.0	44.9	46.8	e	41 13.41	306 36 10.5 11.4	VII A	43.760	22 40 48.01	14 21 41.75	14 6343
29	9.3	31.3	33.5	35.6	37.8	39.9	c	44 35.62	306 36 " "	III	48.220	22 44 10.19	14 23 28.45	14 6352
30	8.0	27.3	29.3	31.5	33.7	36.0	c	45 31.56	306 24 10.0 10.3	III	48.860	22 45 6.12	−14 35 17.47	−14 6355
31	9.3	46.8	48.9	51.1	53.3	55.4	c	46 51.10	305 14 10.0 10.2	III A	42.220	22 46 25.66	−15 44 12.65	−15 6285
32	9.2	37.4	39.5	41.5	43.6	45.8	c	47 41.56	305 14 " "	III B	44.120	22 47 16.12	−15 50 4.82	−16 6167

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
33	8.7	4.4	6.3	8.2	10.1	12.4	a	49 38.05	305 38 10.0 10.5	I	49.840	22 49 12.58	— 15 20 58.87	— 15 6295
34	9.0	28.0	30.2	32.4	34.7	36.7	c	49 32.40	305 (4) 9.3 9.5	III	49.920	22 49 6.94	15 55 1.30	16 6172
35	8.9	47.1	49.3	51.4	53.6	55.7	c	50 51.42	305 (4) " "	III C	46.960	22 50 25.95	16 2 24.23	16 6177
36	8.8	4.5	6.6	8.9	11.0	13.2	c	51 8.84	305 (4) " "	V B	43.330	22 50 43.36	16 0 22.51	16 6178
37	8.9	47.0	49.2	51.3	53.5	55.7	c	52 51.34	306 8 10.0 10.5	III C	44.865	22 52 25.84	14 59 0.53	15 6308
38	8.8	58.5	0.7	2.9	5.0	7.2	c	53 2.86	306 8 " "	V A	44.150	22 52 37.36	14 49 34.21	15 6310
39	9.1	43.0	45.0	47.2	49.5	51.6	c	55 47.26	306 8 " "	III C	46.110	22 55 21.73	14 58 36.51	15 6320
40	8.3	14.2	16.3	18.4	20.7	22.7	c	57 18.46	305 26 9.7 9.5	III A	46.660	22 56 52.92	—15 30 46.92	—15 6330
41	8.8	6.7	8.9	11.0	13.2	15.4	c	58 11.04	305 26 " "	III C	50.250	22 57 45.48	—15 39 19.53	—15 6335
42	9.1	4.9	7.0	8.8	10.6	13.0	a	59 38.69	305 12 10.0 9.6	I	49.070	22 59 13.12	15 47 14.88	16 6202
43	9.0	7.9	9.9	11.7	13.5	15.9	a	0 41.58	305 24 10.0 9.9	I	46.420	23 0 15.99	15 36 4.97	15 6341
44	8.9	40.6	42.6	45.0	47.1	49.2	c	0 44.90	306 4 9.8 9.2	III	45.870	23 0 19.32	14 56 15.71	15 6342
45	8.2	1.7	3.8	6.0	8.3	10.5	c	1 6.06	306 4 " "	V B	47.250	23 0 40.47	14 59 4.03	15 6343
46	9.2	43.7	45.9	48.0	50.2	52.3	c	1 48.02	305 50 9.6 8.9	V	51.000	23 1 22.42	15 8 39.43	15 6347
47	7.0	55.2	57.3	59.5	1.7	3.7	c	4 59.48	305 56 10.0 9.8	III	49.360	23 4 33.86	15 3 8.54	15 6360
48	8.6	20.8	23.0	25.0	27.3	29.4	c	6 25.10	305 16 10.0 9.5	III	47.990	23 5 59.46	15 43 36.82	15 6365
49	9.5	54.6	56.7	58.9	0.9	3.0	c	7 58.82	305 26 10.0 9.5	III	50.870	23 7 33.16	15 32 41.03	15 6369
50	9.0	49.2	51.3	53.5	55.7	57.8	c	9 53.50	306 0 10.0 9.2	III	48.440	23 9 27.83	—14 59 26.21	—15 6374
51	8.9	36.3	38.5	40.6	42.8	44.9	c	10 40.62	306 0 " "	III B	40.830	23 10 14.94	—15 5 5.51	—15 6380
52	8.9	39.3	41.2	43.6	45.7	47.8	c	11 43.52	306 0 " "	III B	50.080	23 11 17.83	15 2 7.97	15 6383
53	9.1	25.0	27.1	29.3	31.5	33.5	c	13 29.28	305 22 10.0 9.4	III	50.000	23 13 3.57	15 36 57.86	15 6391
54	8.9	17.0	19.0	21.1	23.3	25.4	c	14 21.16	306 10 10.0 9.8	III A	43.500	23 13 55.45	14 47 44.81	15 6394
55	8.6	26.9	29.0	31.2	33.3	35.5	c	15 31.18	306 10 " "	III C	46.230	23 15 5.46	14 56 33.96	15 6400
56	9.4	50.4	52.6	54.7	57.0	59.1	c	17 54.76	305 14 10.0 9.1	III B	46.470	23 17 29.01	15 49 19.37	16 6272
57	9.0	4.4	6.5	8.8	10.9	13.2	c	18 8.76	305 14 " "	V A	43.040	23 17 43.01	15 43 58.05	15 6408
58	9.3	20.9	23.0	25.1	27.3	29.5	c	19 25.16	305 32 10.0 9.2	III	47.920	23 18 59.39	15 27 37.36	15 6413
59	9.4	22.3	24.6	26.7	31.1	54.5	$c_1 e_2$	22 26.72	305 38 10.0 9.3	III	44.430	23 22 0.93	15 22 44.04	15 6425
60	9.0	7.0	9.0	11.3	13.7	15.6	c	24 11.32	305 54 9.6 8.6	III	48.070	23 23 45.52	—15 5 33.95	—15 6434
61	8.8	7.8	10.1	12.2	14.3	16.7	c	26 12.22	305 12 10.0 9.6	III	43.130	23 25 46.39	—15 49 10.04	—16 6304
62	9.0	59.0	1.1	2.8	4.8	6.9	a	27 32.52	306 48 10.0 8.9	I A	41.550	23 27 6.70	14 10 19.24	14 6484
63	9.1	32.0	34.0	36.2	38.5	40.5	c	27 36.24	306 48 " "	III	46.100	23 27 10.42	14 12 9.00	14 6486
64	9.4	6.6	8.6	10.7	13.0	15.0	c	37 10.78	305 26 10.0 8.6	III	50.830	23 36 44.84	15 32 42.31	15 6475
65	9.3	35.3	37.5	39.6	41.8	43.9	c	39 39.62	305 26 " "	III A	42.050	23 39 13.66	15 32 15.49	15 6485
66	7.5	4.0	6.1	8.4	10.6	12.7	c	41 8.36	305 42 10.0 9.0	III	44.825	23 40 42.39	15 18 36.71	15 6491
67	9.1	13.1	15.2	17.4	19.5	21.6	c	42 17.36	306 20 10.0 8.7	III	44.715	23 41 51.39	14 40 37.26	14 6546
68	8.8	18.0	20.0	21.9	23.8	26.0	a	43 51.76	305 14 10.1 9.3	I	47.310	23 43 25.76	15 45 48.72	16 6370
69	8.8	7.6	9.7	12.0	14.0	16.3	c	44 11.92	306 16 10.0 8.7	III	50.300	23 43 45.94	14 42 50.33	14 6553
70	8.3	9.2	11.3	13.3	15.7	17.6	c	45 13.42	306 6 10.0 8.4	III	48.260	23 44 47.43	—14 53 30.13	—15 6503
71	6.5	45.5	47.7	49.7	52.0	53.9	c	45 49.76	306 6 " "	III B	46.100	23 45 23.76	—14 57 24.87	—15 6507
72	9.2	50.8	52.9	55.0	57.3	59.4	c	46 55.08	305 4 10.0 8.9	III	49.890	23 46 29.05	15 55 1.60	16 6378
73	9.2	43.4	45.5	47.7	49.8	52.0	c	50 47.68	305 36 10.0 9.0	III	46.460	23 50 21.62	15 24 6.01	15 6521
74	9.3	15.4	17.5	19.7	22.0	24.1	c	55 19.74	305 36 " "	III A	41.710	23 54 53.65	15 22 22.01	15 6527
75	8.7	2.3	4.5	6.5	8.7	10.8	c	58 6.56	305 28 10.0 8.8	III B	44.910	23 57 40.44	15 35 49.89	15 6532
76	9.2	20.0	22.1	24.2	26.4	28.7	c	59 24.28	305 28 " "	III C	42.310	23 58 58.14	15 39 52.77	15 6534
77	9.2	35.2	37.4	39.6	41.7	43.9	c	0 39.56	305 28 " "	III B	41.580	0 0 13.42	15 36 53.96	15 6537
78	9.0	58.5	0.6	2.7	4.9	7.0	c	1 2.74	305 28 " "	III A	42.800	0 0 36.60	15 30 1.92	15 6541
79	9.0	13.2	15.3	17.5	19.6	21.8	c	3 17.48	306 14 9.8 8.0	III	44.230	0 2 51.34	14 46 48.36	15 3
80	8.9	43.6	45.9	47.8	49.8	51.8	e	3 18.19	306 14 " "	VII	44.220	0 2 52.05	—14 46 51.06	—15 3
81	8.8	51.4	53.5	55.6	57.7	59.9	c	4 55.62	306 14 " "	III A	42.870	0 4 29.47	—14 43 59.18	—14 7
82	8.9	37.5	39.6	41.7	43.9	46.0	c	5 41.74	306 34 10.0 8.5	III C	46.365	0 5 15.59	14 32 32.46	14 11
83	8.0	13.4	15.5	17.7	21.9	23.6	$c_3 d_2$	6 13.41	306 34 " "	V	41.820	0 5 47.25	14 27 34.89	14 16
84	7.5	18.9	21.0	23.3	25.4	27.5	c	7 23.22	306 34 " "	III A	48.620	0 6 57.06	14 22 7.74	14 19
85	9.2	53.3	55.6	57.6	59.9	1.9	c	8 57.66	305 36 9.9 7.6	III C	48.120	0 8 31.45	15 30 2.22	15 26
86	7.3	56.0	58.2	0.5	2.5	4.5	c	10 0.34	305 36 " "	III A	44.210	0 9 34.12	15 21 35.79	15 32
87	9.1	58.4	0.5	2.3	4.0	6.5	a	11 32.07	305 56 10.0 8.1	I B	41.720	0 11 5.84	15 8 49.41	15 36
88	8.5	35.1	37.2	39.4	41.5	43.7	c	11 39.38	305 56 " "	III A	43.980	0 11 13.16	15 1 39.09	15 38
89	8.8	18.9	21.2	23.3	25.4	27.6	c	12 23.28	306 6 10.0 8.8	III	46.990	0 11 57.06	14 53 55 97	15 42
90	9.0	21.9	24.0	26.1	28.2	30.4	c	13 26.12	306 6 " "	III A	42.780	0 12 59.89	—14 52 1.46	—15 49
91	8.9	55.0	57.0	59.2	1.3	3.5	c	18 59.20	306 16 10.1 9.0	III A	53.850	0 18 32.93	—14 38 28.87	—14 58
92	8.9	28.8	31.2	33.0	35.0	36.7	e	19 3.36	306 16 " "	VII	48.050	0 18 37.09	14 43 38.08	14 59
93	9.0	34.8	36.9	38.8	40.7	42.5	e	20 9.08	305 42 10.0 8.4	V	49.290	0 19 42.78	15 17 15.17	15 63
94	8.5	30.1	32.3	34.4	36.6	38.8	c	22 34.44	306 12 10.4 9.3	III	46.380	0 22 8.14	14 48 7.85	15 70
95	9.0	2.6	4.7	6.8	8.9	11.0	c	24 6.80	306 2 10.0 8.2	III	47.290	0 23 40.48	14 57 51.77	15 74
96	8.6	18.8	20.9	23.0	25.3	27.4	c	25 23.08	306 2 " "	III	45.000	0 24 56.75	14 58 35.85	15 85
97	8.8	57.7	59.7	1.9	4.2	6.5	c	28 2.00	305 32 10.0 8.2	III	49.650	0 27 35.63	15 27 8.30	15 95
98	9.0	1.9	3.8	6.0	8.3	10.5	c	29 6.10	306 10 10.0 8.5	III	45.755	0 28 39.75	14 50 19.86	15 98
99	8.9	32.5	34.6	36.6	38.5	40.4	e	29 6.92	306 10 " "	VII B	47.630	0 28 40.57	14 53 1.42	15 99
100	6.8	23.7	25.7	28.0	30.2	32.2	c	31 27.96	305 28 10.0 8.1	III	49.100	0 31 1.56	—15 31 19.51	—15 109
101	8.9	59.0	1.2	3.3	5.5	7.7	c	34 3.34	306 12 10.5 8.8	III	50.065	0 33 36.96	—14 46 58.57	15 116
102	9.1	10.3	12.4	14.5	16.8	19.0	c	35 14.60	306 12 " "	III B	47.960	0 34 48.21	14 50 52.40	15 118
103	9.0	39.5	41.6	43.7	45.9	48.0	c	39 43.74	306 12 " "	III	50.420	0 39 17.32	14 46 52.46	15 135
104	9.3	56.2	58.3	0.5	2.7	4.9	c	41 0.52	306 12 " "	III C	50.380	0 40 34.08	14 53 19.56	15 137
105	8.7	31.5	33.6	35.9	38.0	40.2	c	42 35.84	306 20 10.9 8.6	III	49.380	0 42 9.40	—14 39 12.31	— 14 134

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°	
106	8.6	34.3	36.5	38.7	41.0	43.2	c	43 38.74	306 8 10.0	8.2	III	49.940	0 43 12.29	−14 51 2.91	−15	145
107	8.2	55.0	57.2	59.4	1.7	3.8	c	43 59.42	305 42 10.0	8.0	V	47.920	0 43 32.94	15 17 44.40	15	146
108	8.6	7.4	9.3	11.5	13.9	15.8	c	46 11.58	305 36 10.0	8.0	III	50.540	0 45 45.08	15 22 53.39	15	152
109	9.1	56.0	58.2	0.4	2.5	4.7	c	47 0.36	305 36 "	"	III	42.050	0 46 33.85	15 25 36.43	15	156
110	9.0	51.7	53.8	56.0	58.2	0.4	c	48 56.02	305 36 "	"	III	48.230	0 48 29.49	−15 23 38.08	−15	160
111	9.0	56.1	58.4	0.5	2.7	4.9	c	53 0.52	305 36 10.0	8.5	III	43.960	0 52 33.96	−15 25 0.38	−15	175
112	8.7	17.0	19.0	21.2	23.4	25.4	c	57 21.20	306 20 10.0	8.9	III	46.450	0 56 54.66	14 40 10.92	14	191
113	9.0	53.9	56.1	58.3	0.5	2.6	c	58 58.28	305 58 10.0	8.5	III	45.410	0 58 31.71	15 2 32.38	15	191
114	9.0	35.1	37.3	39.4	41.6	43.8	c	0 39.44	305 34 10.0	8.5	III	45.620	1 0 12.83	15 26 29.79	15	194
115	8.9	11.7	13.8	16.0	18.1	20.2	c	1 15.96	305 34 "	"	III	49.720	1 0 49.35	15 25 11.20	15	199
116	8.6	49.8	52.0	54.1	56.3	58.4	c	1 54.12	306 10 10.0	8.5	V	48.030	1 1 27.54	14 49 43.35	15	200
117	8.9	21.5	23.7	25.7	28.0	30.0	c	5 25.78	306 10 10.0	8.1	V A	45.940	1 4 59.18	14 47 9.00	15	210
118	8.7	1.9	4.0	6.0	8.0	9.7	e	5 36.30	306 10 "	"	VII C	45.100	1 5 9.69	14 57 7.37	15	211
119	9.0	20.0	22.1	24.3	26.4	28.6	c	7 24.28	305 54 10.0	8.2	III	49.810	1 6 57.66	15 5 8.65	15	217
120	9.0	23.8	25.7	28.0	30.2	32.3	c	8 28.00	305 40 10.2	9.3	III A	43.660	1 8 1.35	−15 17 52.51	−15	222
121	9.4	18.4	20.6	22.7	24.9	27.0	c	9 22.72	305 40 "	"	III B	45.990	1 8 56.06	−15 23 36.62	−15	229
122	8.4	57.0	59.0	1.2	3.5	5.6	c	10 1.26	306 12 10.0	8.6	III	46.590	1 9 34.64	14 48 10.84	15	232
123	9.3	46.1	48.2	50.3	52.5	54.7	c	11 50.36	306 2 10.0	8.7	III	45.040	1 11 23.72	14 58 41.31	15	236
124	9.2	52.5	54.7	56.9	59.0	1.1	c	12 56.84	306 2 "	"	III A	43.080	1 12 30.19	14 56 3.74	15	241
125	9.0	30.5	32.6	34.7	36.9	39.1	c	14 34.76	305 38 10.0	8.9	III	46.750	1 14 8.07	15 22 10.05	15	244
126	8.2	16.8	19.0	21.2	23.4	25.5	c	15 21.18	305 38 "	"	III B	43.820	1 14 54.48	15 26 19.72	15	247
127	9.1	31.5	33.6	35.8	38.0	40.1	c	16 35.80	305 54 10.0	8.6	III	46.340	1 16 9.12	−15 6 17.65	−15	250

Reduction Elements. Zone 143.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
October 8.3....	−0.093	+0.025	−0.640	−0.082	+0.040	−0.636
8.5....	−0.070	+0.054	−0.633			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ν Aquarii		β Aquarii		Mayer 911		ι Aquarii		υ Aquarii		g Aquarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	309 14 11.10		315 0 10.00		302 38 10.25		306 40 10.30		299 48 9.80		301 40 9.95	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.025	5 36.31	43.930	5 18.40	44.215	5 22.19	42.740	4 53.90	43.860	5 15.75	43.460	5 8.50
II Red. to Mer......	.020	0.12	44.040	0.06	.250	0.18	.695	0.14	.890	0.21	.490	0.19
VI Inclination		1.68	.165		.330		.905		44.030		.660	
VII Refraction		1 10.8	.220	58.0	.350	1 30.5	.905	1 18.0	.020	1 41.3	.680	1 34.2

	22 Ceti		Lalande 1691		η Ceti		50 Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	309 12 9.50		300 50 8.75		310 18 9.25		305 6 9.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.055	5 38.50		6 14.54		5 22.79	45.290	5 43.17
II Red. to Mer......	.040	0.12	46.930	0.17	44.220	0.09	.270	0.16
VI Inclination	.230		47.040	−0.67	.340	−0.67	.470	
VII Refraction	.220	1 11.8	.095	1 37.9	.390	1 9.2	.490	1 23.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ν Aquarii...........	21 4 33.37	11	− 0.56	−36.77	309 18 38.4	16.1
1 H. Draconis S. P...	21 22 52.53	8	− 3.40	[−36.83]	59 16	....
β Aquarii...........	21 26 42.66	11	− 0.51	−36.78	315 4 30.5	15.2
Mayer 911........	21 57 6.34	11	− 0.63	−36.71	302 42 2.1	15.6
ι Aquarii...........	22 1 27.35	11	− 0.59	−36.95	306 43 46.3	16.1
υ Aquarii...........	22 29 38.54	11	− 0.66	−36.76	299 51 44.5	14.9
g Aquarii...........	22 38 37.79	11	− 0.64	−36.88	301 43 44.4	15.3
22 Ceti..............	0 51 27.00	11	− 0.56	−36.88	309 16 36.3	16.8
Lalande 1691......	0 54 14.72	11	− 0.65	−36.81	300 54 44.9	17.8
η Ceti..............	1 3 59.85	11	− 0.55	−36.88	310 22 22.3	15.8
α Ursae Minoris.....	1 21 39.76	4	+19.75	[−36.96]	49 48	....
50 Ceti..............	1 31 33.16	11	− 0.60	−36.87	305 10 29.2	16.6

21.938 h .... dt .... −36.808 s

Hourly rate .... − 0.0165

Adopted Equator Point..........321° 6′ 16.02″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
21 0	29.756	50.5	48.0
22 0	29.770	48.6	46.2
23 0	29.788	47.7	44.6
0 0	29.794	47.0	43.6
1 2	29.790	45.4	41.7
1 32	29.797	44.4	41.2

Notes.

1. Very difficult. $A = +13.08^s$, $D = -9.04''$.

Mayer 911. Image steady.

ι Aquarii. Image very unsteady.

61. Images bad.

95. Images somewhat better.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				$D =$ Z. D. N. to 1895.0				R			
			304°	305°	306°	307°	304°	305°	306°	307°	304°	305°	306°	307°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
304	−0.614	21 0	......	......	......	......	.....	.....	.....	.....	85.92	82.78	79.80	76.95
305	0.604	21 30	......	......	......	......	.....	.....	.....	.....	86.10	82.95	79.96	77.11
306	0.594	22 0	+12.505	+12.467	+12.428	+12.390	−13.89	−14.16	−14.43	−14.70	86.28	83.12	80.13	77.27
307	−0.584	22 30	12.177	12.153	12.128	12.103	16.47	16.72	16.95	17.19	86.46	83.29	80.30	77.43
		23 0	+11.858	11.848	11.837	11.827	−18.90	19.11	19.31	19.52	86.62	83.44	80.44	77.57
		23 30	......	11.558	11.561	11.564	.....	21.32	21.48	21.65	86.70	83.52	80.52	77.64
		0 0	.....	11.288	11.306	11.323	.....	23.29	23.42	23.54	86.80	83.62	80.61	77.73
		0 30	......	11.042	11.073	11.104	.....	24.98	25.07	25.16	86.96	83.77	80.76	77.88
		1 0	......	10.825	10.870	10.913	.....	26.37	26.42	26.47	87.12	83.93	80.91	78.02
		1 30	......	+10.641	+10.697	+10.754	.....	−27.46	−27.46	−27.47	87.26	84.06	81.04	78.14

1895 OCTOBER 10. ZONE 144. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	
1	9.1	37.5	39.6	41.7	43.9	46.0	c	33 41.74	306	26	10.0	11.8	III	48.530	22 33 15.03	−14 33 25.63	−14 6321
2	9.1	30.7	32.6	34.7	36.8	39.0	c	10 34.76	307	6	10.5	13.0	III	46.080	23 10 7.68	13 54 8.18	14 6431
3	8.6	44.5	46.6	48.4	50.3	52.6	a	14 18.05	307	6	"	"	I C	48.040	23 13 50.94	13 59 55.32	14 6448^1
4	6.8	13.9	16.0	18.1	20.3	22.4	c	14 18.14	307	6	"	"	III C	47.380	23 13 51.03	14 0 9.32	14 6448^2
5	8.3	45.1	47.4	49.4	51.6	53.8	c	14 49.46	306	22	10.0	12.5	V	50.530	23 14 22.34	14 36 46.52	14 6450
6	8.0	55.5	57.6	59.4	1.2	3.5	a	16 28.99	307	10	10.0	12.3	I	49.460	23 16 1.86	13 49 2.14	14 6453
7	8.5	42.8	44.8	47.1	49.2	51.3	c	16 47.04	306	32	10.0	13.1	III C	45.435	23 16 19.90	14 34 48.32	14 6456
8	9.1	47.4	49.5	51.6	53.8	55.8	c	17 51.62	306	32	"	"	III A	41.740	23 17 24.48	14 26 17.71	14 6460
9	9.2	9.5	11.6	13.8	16.0	18.1	c	18 13.80	306	56	10.0	12.5	V A	41.820	23 17 46.66	14 2 16.87	14 6461
10	9.2	3.2	5.4	7.5	9.7	11.9	c	20 7.54	306	56	"	"	III A	41.640	23 19 40.37	−14 2 18.81	−14 6466
11	9.5	31.2	33.2	35.4	37.3	39.7	c	21 35.36	306	56	"	"	III C	46.570	23 21 8.18	−14 10 25.74	−14 6471
12	8.9	56.8	58.9	1.0	3.3	5.4	c	26 1.08	307	8	10.0	12.5	III	48.690	23 25 33.86	13 51 18.36	14 6479
13	8.8	25.9	28.1	30.3	32.5	34.6	c	26 30.28	307	8	"	"	V B	40.980	23 26 3.05	13 57 1.14	14 6481
14	8.7	34.0	36.1	38.4	40.5	42.6	c	27 38.32	307	8	"	"	III A	40.150	23 27 11.08	13 50 46.90	14 6485
15	8.0	3.9	6.0	7.8	9.7	11.9	a	32 37.42	307	8	"	"	I	41.740	23 32 10.14	13 53 30.30	14 6506
16	6.0	51.4	53.7	55.8	58.0	0.0	c	32 55.78	307	22	10.0	11.6	III	50.050	23 32 28.50	13 36 52.18	13 6439
17	9.1	36.7	38.9	40.6	42.5	44.8	a	39 10.33	306	36	10.0	12.7	I	48.730	23 38 42.98	14 23 17.63	14 6534
18	8.4	23.7	25.9	28.0	30.3	32.5	c	39 28.08	307	16	10.0	12.9	III	44.500	23 39 0.73	13 44 38.44	13 6457
19	8.1	34.9	37.1	39.3	41.5	43.6	c	40 39.28	306	46	10.0	13.1	III	45.835	23 40 11.92	14 14 14.10	14 6536
20	9.0	29.6	31.8	33.9	36.0	38.2	c	44 33.90	307	8	10.0	12.6	III	47.790	23 44 6.51	−13 51 35.97	−14 6558
21	9.1	1.3	3.2	5.0	6.9	9.2	a	44 34.71	306	54	10.0	13.1	I	45.730	23 44 7.32	−14 6 14.36	−14 6557
22	7.8	44.8	46.9	48.9	51.2	53.5	c	45 49.06	307	20	10.0	12.0	III	46.580	23 45 21.66	13 39 59.00	13 6471
23	9.0	52.3	54.4	56.5	58.6	0.8	c	46 56.52	306	26	10.0	13.1	III A	41.220	23 46 29.10	14 32 28.40	14 6563
24	9.0	3.8	6.0	8.0	10.3	12.5	c	48 8.12	306	26	"	"	III B	42.560	23 47 40.68	14 38 31.38	14 6567
25	9.3	17.6	19.7	22.0	24.1	26.0	c	49 21.88	306	26	"	"	III	47.710	23 48 54.44	14 33 39.32	14 6572
26	7.5	0.8	2.9	5.0	7.2	9.3	c	51 5.04	307	18	10.0	12.0	III	45.190	23 50 37.60	13 42 25.98	13 6485
27	9.2	30.3	32.4	34.6	36.8	38.9	c	51 34.60	306	56	10.0	12.8	III	46.410	23 51 7.15	14 4 3.16	14 6581
28	9.1	40.3	42.5	44.6	46.8	49.0	c	54 44.64	307	6	10.0	12.9	III A	41.960	23 54 17.16	13 52 12.86	14 6592
29	9.0	36.5	38.7	40.8	43.0	45.0	c	55 40.80	307	6	"	"	III (B)	47.430	23 55 13.31	13 56 56.57	14 6597
30	7.5	1.4	3.5	5.2	7.1	9.4	a	57 34.89	307	6	"	"	I B	44.330	23 57 7.39	−13 57 54.44	−14 6603
31	9.1	30.3	32.0	36.2	38.3	40.5	b_2 c_3	57 40.45	307	6	"	"	III B	42.320	23 57 12.94	−13 58 34.73	−14 6605
32	9.0	52.8	54.8	57.0	1.0	2.7	c_3 d_2	58 52.67	307	12	10.0	12.7	V A	39.510	23 58 25.16	13 47 1.42	14 6608
33	9.2	3.3	5.6	7.6	9.8	12.0	c	2 7.66	306	42	9.8	12.2	III	46.040	0 1 40.11	14 18 11.87	14 6619
34	9.4	15.0	17.0	19.2	21.4	23.5	c	4 19.22	306	56	10.0	12.3	III A	44.100	0 3 51.66	14 1 33.03	14 5
35	9.0	32.0	34.1	36.3	38.5	40.5	c	5 36.28	306	56	"	"	III C	43.290	0 5 8.71	14 11 30.26	14 9
36	9.0	28.2	30.4	32.5	34.6	36.7	c	6 32.48	306	56	"	"	III	45.415	0 6 4.90	14 4 23.38	14 17
37	8.2	54.0	56.2	58.3	0.4	2.5	c	7 58.28	306	56	"	"	III C	48.050	0 7 30.69	14 9 59.10	14 23
38	9.2	49.0	51.0	52.8	54.6	57.0	a	10 22.41	307	22	10.0	11.6	I	51.800	0 9 54.81	13 36 18.76	13 32
39	8.1	41.8	44.0	46.3	48.4	50.6	c	10 46.22	307	22	"	"	III A	40.845	0 10 18.62	13 36 35.19	13 35
40	9.2	16.8	19.0	21.0	22.7	24.5	e	10 51.35	307	22	"	"	VII B	46.150	0 10 23.75	−13 41 24.95	−13 37
41	8.9	21.3	23.5	25.6	27.9	29.9	c	12 25.64	307	22	"	"	III	49.770	0 11 58.02	−13 36 59.42	−13 40
42	8.0	28.6	30.7	32.8	35.0	37.1	c	15 32.84	307	22	"	"	III	49.710	0 15 5.20	13 37 0.82	13 52
43	9.0	30.9	33.0	35.1	37.3	39.4	c	17 35.14	307	0	10.0	12.9	III	42.890	0 17 7.47	14 1 12.22	14 55
44	8.8	10.9	13.2	15.3	17.5	19.7	c	18 15.32	307	0	"	"	III B	43.965	0 17 47.65	14 4 4.91	14 56
45	9.1	45.4	47.5	49.3	51.1	53.5	a	21 18.91	307	18	10.0	12.2	I C	46.260	0 20 51.22	13 48 32.26	14 62
46	8.9	25.5	27.6	29.8	31.9	34.0	c	21 29.76	307	18	"	"	III A	49.550	0 21 2.07	−13 37 48.92	−13 69

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
47	8.3	56.7	58.8	0.9	3.2	5.2	c	22 0.96	306 24 10.0 12.7	V 50.375	0 21 33.23	—14 34 52.06	—14 67
48	9.4	39.1	41.2	43.4	45.6	47.5	c	23 43.36	307 6 10.0 12.6	III 48.790	0 23 15.65	13 53 19.42	14 68
49	8.6	35.7	37.9	40.0	42.2	44.3	c	24 40.02	306 54 10.0 12.0	III 44.180	0 24 12.30	14 6 48.83	14 71
50	8.4	54.9	57.0	59.2	1.3	3.5	c	25 59.18	306 44 10.0 12.9	III 46.530	0 25 31.44	—14 16 3.88	—14 75
51	8.9	18.9	21.0	22.9	25.0	27.2	c	27 23.00	307 12 10.0 12.7	III B 45.200	0 26 55.27	—13 51 41.67	—14 80
52	8.2	9.2	11.3	13.3	15.7	17.7	c	28 13.44	307 12 " "	III 45.120	0 27 45.70	13 48 29.99	14 84
53	8.9	47.2	49.4	51.5	53.6	55.8	c	30 51.50	306 32 10.0 12.2	III 46.500	0 30 23.70	14 28 5.87	14 96
54	9.0	28.6	30.6	32.8	35.0	37.2	c	34 32.84	307 18 10.0 11.8	III C 47.185	0 34 5.05	13 48 17.38	14 105
55	8.9	17.6	19.7	21.9	24.0	26.2	c	35 21.88	307 18 " "	III A 49.890	0 34 54.09	13 37 44.03	13 113
56	9.1	56.7	58.9	1.0	3.3	5.4	c	37 1.06	306 48 10.0 12.6	III 46.660	0 36 33.24	14 12 2.56	14 117
57	8.2	53.5	55.7	57.9	2.0	3.6	$c_3 d_2$	39 53.54	307 2 9.8 11.7	V 47.680	0 39 25.70	13 57 44.59	14 124
58	8.8	5.1	7.2	9.3	11.7	13.8	c	42 9.42	306 42 10.0 12.4	III 45.340	0 41 41.56	14 18 28.89	14 133
59	6.3	47.8	49.8	52.0	54.3	56.4	c	44 52.06	306 54 10.0 11.9	III ( ) 46.190	0 44 24.19	14 6 12.63	14 145
60	8.8	40.1	42.3	44.3	46.5	48.6	c	46 44.36	307 18 10.0 12.1	III A 44.280	0 46 16.49	—13 39 32.94	—13 142
61	9.1	30.2	32.4	34.7	36.7	39.0	c	47 34.60	307 18 " "	III B 43.410	0 47 6.71	—13 46 18.43	—14 152
62	9.2	27.6	29.7	31.4	33.2	35.5	a	53 1.11	306 34 10.0 12.8	I 47.640	0 52 33.16	14 25 44.90	14 171
63	9.4	47.9	50.0	52.2	54.3	56.4	c	55 52.16	306 52 9.4 11.5	V 46.540	0 55 24.21	14 8 9.35	14 184
64	9.2	23.8	25.9	28.0	30.2	32.4	c	56 28.06	306 52 " "	V B 46.290	0 56 0.10	14 11 27.71	14 187
65	9.3	28.4	30.5	32.7	34.9	37.0	c	57 32.70	307 8 10.0 11.9	III 44.740	0 57 4.75	13 52 41.58	14 192
66	7.5	29.3	31.4	33.5	35.7	37.8	c	0 33.54	306 42 9.6 11.7	III 47.990	1 0 5.55	14 17 41.18	14 203
67	9.4	12.3	14.4	16.5	18.6	20.8	c	2 16.52	306 54 10.0 11.9	III 47.385	1 1 48.53	14 5 53.19	14 211
68	9.1	29.2	31.2	33.5	35.7	37.8	c	5 33.48	306 28 10.0 12.1	V 42.425	1 5 5.43	14 33 30.36	14 223
69	8.0	43.4	45.5	47.6	49.9	52.0	c	6 47.68	306 58 10.0 12.7	III 46.630	1 6 19.65	14 2 6.83	14 225
70	9.3	19.5	21.8	23.7	26.0	28.0	c	8 23.80	306 30 10.0 12.4	III B 46.140	1 7 55.73	—14 33 31.23	—14 231
71	9.0	30.4	32.6	34.8	36.9	38.8	c	8 34.70	306 30 " "	V 49.070	1 8 6.64	—14 29 23.09	—14 233
72	9.0	48.6	50.6	52.7	54.9	56.9	c	10 52.74	306 34 10.0 12.6	III 47.540	1 10 24.66	14 25 51.19	14 240
73	8.4	53.4	55.5	57.7	59.9	2.0	c	11 57.70	306 56 10.0 12.3	III 45.320	1 11 29.64	14 4 33.10	14 244
74	7.7	9.6	11.7	13.9	16.0	18.1	c	14 13.86	307 10 10.0 12.8	III B 40.190	1 13 45.80	13 55 24.33	14 252
75	9.1	11.6	13.6	15.7	17.9	20.0	c	15 15.76	307 10 " "	III A 41.440	1 14 47.70	13 48 31.86	14 255
76	9.1	22.5	24.5	26.6	28.8	30.9	c	16 26.66	307 10 " "	III 45.450	1 15 58.59	13 50 30.48	14 260
77	8.8	47.8	49.8	52.0	54.2	56.4	c	17 52.04	306 34 10.0 12.8	III B 44.200	1 17 23.92	14 30 9.71	14 265
78	8.5	28.6	30.7	32.4	34.4	36.8	a	19 2.22	306 34 " "	I 44.625	1 18 34.10	—14 26 46.97	—14 270

Reduction Elements. Zone 144.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 10.3....	—0.084	+0.033	—0.467	—0.076	+0.042	—0.462
10.5....	—0.068	+0.052	—0.457			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Mayer 911		*υ* Aquarii		*λ* Aquarii		*h* Aquarii		c^2 Aquarii		*β* Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	302 38 11.60		299 48 10.05		312 54 11.05		312 46 11.00		299 18 10.50		302 28 11.20	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.260	5 23.65	43.965	5 17.88	43.610	5 11.69	45.790	5 53.17	44.950	5 36.96	47.010	6 16.56
II Red. to Mer......	.290	0.18	.975	0.21	.675	0.08	.810	0.08	45.030	0.22	.065	0.18
VI Inclination	.440		44.135		.820		46.000		.120		.200	
VII Refraction	.460	1 32.1	.175	1 43.0	.850	1 3.7	.010	1 4.0	.125	1 45.2	.210	1 33.0

	Lalande 1691		*η* Ceti		*θ* Ceti	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	300 50 10.70		310 18 11.19		312 18 11.50	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.800	6 12.50	44.165	5 21.46		6 6.62
II Red. to Mer	.825	0.20	.175	0.11	46.520	0.07
VI Inclination	.980		.300		.650	—0.67
VII Refraction	47.030	1 39.2	.350	1 10.0	.640	1 5.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

	NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
		h m s		s	s	° ′ ″	″
	Mayer 911	21 57 7.68	11	− 0.47	−38.22	302 42 3.3	16.9
9	H. Draconis S. P	22 26 52.73	11	− 1.51	[−38.38]	64 48	....
υ	Aquarii	22 29 39.95	11	− 0.49	−38.34	299 51 45.1	15.7
λ	Aquarii	22 47 50.82	11	− 0.39	−38.43	312 58 19.1	17.2
h	Aquarii	23 0 23.89	11	− 0.39	−38.39	312 51 0.2	17.1
c²	Aquarii	23 4 33.96	11	− 0.49	−38.43	299 22 2.5	16.8
β	Ceti	0 39 2.15	11	− 0.47	−38.44	302 32 54.9	16.6
	Lalande 1691	0 54 16.14	11	− 0.48	−38.37	300 54 44.2	17.3
η	Ceti	1 4 1.35	11	− 0.41	−38.51	310 22 22.7	16.3
θ	Ceti	1 19 29.29	11	− 0.39	−38.45	312 23 12.2	16.1
α	Ursae Minoris	1 21 47.60	3	+13.98	[−38.61]	49 48	....

h 22.666 .... dt .... s −38.362

Hourly rate .... − 0.034

Adopted Equator Point .... ° ′ ″ 321 6 16.6

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
22 26	30.116	45.4	43.0
23 0	30.102	44.9	42.4
0 0	30.092	44.1	41.4
1 0	30.082	43.4	40.6
1 20	30.088	43.8	40.4

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0			$D=$ Z. D. N. to 1895.0			R		
			306°	307°	308°	306°	307°	308°	306°	307°	307° 30
°	s ′	h m	s	s	s	″	″	″	″	″	″
306	−0.440	22 30	+12.130	+12.106	+12.081	−16.89	−17.14	−17.38	81.62	78.70	77.30
307	0.432	23 0	11.835	11.825	11.814	19.26	19.47	19.68	81.68	78.76	77.36
308	−0.425	23 30	11.555	11.557	11.560	21.40	21.58	21.75	81.73	78.81	77.41
		0 0	11.292	11.309	11.326	23.33	23.47	23.61	81.81	78.89	77.48
		0 30	11.055	11.086	11.116	24.97	25.07	25.16	81.87	78.94	77.54
		1 0	10.846	10.888	10.930	26.31	26.37	26.43	81.92	79.00	77.59
		1 30	+10.666	+10.723	+10.778	−27.35	−27.37	−27.38	82.00	79.07	77.66

1895 OCTOBER 16. ZONE 145. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	8.6	49.0	51.0	53.2	55.5	57.5	c	3 53.24	305	24	10.0	11.0	III	49.160	23 3 22.77	−15 35 12 25	−15 635
2	8.9	4.4	6.6	8.7	10.8	13.0	c	5 8.70	305	24	"	"	III	49.280	23 4 38.21	15 35 9.90	15 636
3	9.1	19.7	22.0	24.0	26.3	28.4	c	6 24.08	304	34	10.0	11.2	III C	46.830	23 5 53.57	16 32 25.28	16 623
4	8.8	26.4	28.5	30.6	32.8	35.0	c	7 30.66	304	34	"	"	III A	42.480	23 7 0.14	16 24 7.17	16 623
5	9.4	13.0	15.0	17.2	19.6	21.7	c	8 17.30	304	14	10.0	10.5	III B	50.200	23 7 46.77	16 48 8.94	17 670
6	9.1	55.9	58.2	0.3	2.4	4.6	c	9 0.28	304	14	"	"	III	51.070	23 8 29.74	16 44 38.94	16 624
7	9.3	27.5	29.9	31.8	34.0	35.8	e	9 1.90	304	14	"	"	VII C	47.780	23 8 31.36	16 52 10.41	17 670
8	7.7	3.6	5.9	8.0	10.3	12.4	c	10 8.04	304	14	"	"	III	43.750	23 9 37.49	16 46 59.42	17 671
9	9.1	43.3	45.3	47.5	49.6	51.7	c	10 47.48	304	36	10.0	10.7	III	46.380	23 10 16.92	16 24 7.79	16 624
10	9.0	50.4	52.6	54.7	56.9	59.0	c	11 54.72	304	54	10.0	11.6	III	45.350	23 11 24.16	−16 6 26.24	−16 625
11	8.0	52.1	54.3	56.5	58.8	0.8	c	14 56.50	304	40	10.0	11.0	III	47.590	23 14 25.90	−16 19 44.16	−16 625
12	9.3	16.7	18.7	20.9	23.2	25.3	c	16 20.96	305	14	10.0	11.1	III	48.830	23 15 50.35	15 45 18.73	16 626
13	8.7	4.0	6.3	8.4	10.8	12.8	c	17 8.46	304	8	10.0	10.9	III	48.800	23 16 37.83	16 51 22.48	17 673
14	9.2	25.2	27.6	29.7	32.0	34.2	c	18 29.74	303	54	10.0	11.1	III	49.725	23 17 59.09	17 5 5.27	17 674
15	9.4	59.6	1.8	4.1	6.4	8.6	c	19 4.10	304	34	10.0	11.3	III	49.720	23 18 33.45	16 25 3.36	16 627
16	9.1	50.3	52.6	54.6	57.0	59.1	c	19 54.72	305	12	10.0	11.4	III B	48.890	23 19 24.06	15 50 30.75	16 628
17	9.1	20.0	22.0	24.3	26.5	28.7	c	21 24.30	305	12	"	"	III	51.610	23 20 53.63	15 46 25.26	16 628
18	8.0	10.3	12.3	14.5	16.7	18.8	c	22 14.52	305	12	"	"	III	47.060	23 21 43.84	15 47 52.59	16 629
19	8.1	9.8	11.9	14.0	16.3	18.4	c	23 14.08	305	12	"	"	III B	47.480	23 22 43.39	15 50 57.81	16 629
20	9.2	58.9	1.0	3.0	5.3	7.6	c	24 3.16	305	12	"	"	III	49.080	23 23 32.46	−15 47 13.84	−16 629
21	9.5	23.1	25.4	27.4	29.7	31.9	c	26 27.50	304	54	10.0	11.6	III	50.540	23 25 56.78	−16 4 46.54	−16 630
22	8.5	10.2	12.3	14.4	16.7	18.7	c	27 14.46	305	30	10.0	10.9	III	48.900	23 26 43.73	15 29 16.73	15 644
23	9.3	25.1	27.2	29.3	31.5	33.8	c	28 29.38	305	30	"	"	III B	50.150	23 27 58.63	15 32 6.03	15 645
24	9.5	17.2	19.4	21.5	23.7	26.1	c	29 21.58	305	30	"	"	III C	49.230	23 28 50.82	15 35 36.59	15 645
25	6.5	3.7	5.8	7.9	10.0	12.3	c	30 7.94	305	12	10.0	11.4	V	47.400	23 29 37.17	15 47 47.45	16 631
26	8.2	56.7	58.8	1.0	3.1	5.3	c	31 0.98	305	12	"	"	III B	47.170	23 30 30.20	15 51 3.80	16 631
27	9.3	55.9	57.9	0.1	2.4	4.7	c	32 0.20	304	24	10.0	11.0	III	46.840	23 31 29.40	16 35 59.33	16 632
28	8.7	52.6	54.8	57.0	59.3	1.3	c	32 57.00	305	20	10.0	11.0	III (C)	47.750	23 32 26.20	15 46 5.44	16 632
29	6.8	17.7	19.8	21.9	24.0	26.2	c	33 21.92	305	20	"	"	V	50.715	23 32 51.12	15 38 43.71	15 646
30	8.7	29.5	31.6	33.7	35.9	38.0	c	35 33.74	305	2	10.0	10.2	III	45.180	23 35 2.92	−15 58 29.87	−16 633
31	9.3	50.4	52.7	54.8	57.0	59.0	c	36 54.78	304	56	10.0	10.4	III C	46.100	23 36 23.94	−16 10 38.58	−16 633
32	8.3	13.9	16.2	18.2	20.5	22.6	c	37 18.28	304	56	"	"	III A	45.750	23 36 47.44	16 1 3.75	16 634
33	6.0	43.6	45.8	47.9	50.1	52.2	c	37 47.92	304	56	"	"	III A	48.660	23 37 17.07	−16 0 7.91	−16 634

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
34	9.3	38.5	40.7	42.6	44.6	46.8	a	39 12.63	304 6 10.0 12.0	I 49.280	23 38 41.74	−16 53 11.48	−17 6806
35	9.1	18.0	20.4	22.5	24.7	26.7	c	39 22.46	304 46 10.0 11.7	III 49.745	23 38 51.58	16 13 2.35	16 6353
36	9.5	43.3	45.6	47.6	49.9	52.0	c	40 47.68	305 6 10.0 10.8	III 46.650	23 40 16.80	15 54 1.31	16 6356
37	8.0	19.0	21.2	23.4	25.6	27.7	c	41 23.38	305 18 10.0 11.4	V 48.880	23 40 52.49	15 41 19.00	15 6494
38	8.9	22.6	24.6	26.7	28.5	30.9	a	42 56.60	304 34 10.0 11.4	I C 47.110	23 42 25.68	16 32 18.54	16 6363
39	9.2	57.3	59.3	1.7	3.9	5.9	c	43 1.62	304 34 " "	V A 41.530	23 42 30.70	16 24 26.94	16 6365
40	6.8	48.2	50.5	52.6	54.9	57.0	c	44 52.64	304 34 " "	III 50.000	23 44 21.70	−16 24 58.33	−16 6373
41	9.0	7.0	9.2	11.3	13.5	15.8	c	46 11.36	304 18 10.0 11.4	III 50.570	23 45 40.41	−16 40 48.21	−16 6376
42	9.0	32.1	34.3	36.4	38.6	40.7	c	47 36.42	304 34 10.0 10.7	III 51.100	23 47 5.45	16 24 37.67	16 6379
43	9.6	34.9	37.3	39.6	41.6	43.9	c	48 39.46	304 34 " "	III C 43.770	23 48 8.48	16 33 24.79	16 6381
44	9.4	3.2	5.2	7.6	9.7	11.8	c	49 7.50	304 34 " "	V 49.010	23 48 36.51	16 25 19.21	16 6383
45	9.2	4.0	6.6	8.6	10.9	13.0	c	52 8.62	304 2 10.0 10.4	V 50.580	23 51 37.59	16 56 50.88	17 6849
46	9.2	41.3	43.5	45.8	48.0	50.2	c	52 45.76	304 20 10.0 10.7	V 49.460	23 52 14.73	16 39 11.39	16 6390
47	6.5	39.3	41.6	43.8	46.0	48.0	c	53 43.74	304 36 10.0 11.0	III 46.070	23 53 12.70	16 24 14.25	16 6394
48	9.4	27.0	29.3	31.6	33.8	35.7	c	54 31.48	304 14 10.0 11.0	III 44.815	23 54 0.43	16 46 39.40	17 6855
49	8.4	33.9	36.0	37.8	39.7	42.1	a	57 7.92	303 56 10.0 10.8	I 42.560	23 56 36.84	17 5 22.28	17 6864
50	8.9	53.5	55.6	57.6	0.0	2.0	c	57 57.74	304 36 10.0 10.6	V 49.110	23 57 26.66	−16 23 17.68	−16 6407
51	9.3	39.4	41.6	43.7	46.0	48.2	c	59 43.78	304 36 " "	III 49.450	23 59 12.68	−16 23 9.93	−16 6410
52	9.1	56.2	58.6	0.7	3.1	5.0	c	0 0.72	304 36 " "	V B 48.410	23 59 29.61	16 26 44.73	16 6411
53	8.8	3.4	5.5	7.7	9.7	12.0	c	1 7.66	305 4 10.0 11.0	III 48.830	0 0 36.56	15 55 20.37	16 6415
54	9.0	27.3	29.5	31.6	33.8	36.0	c	2 31.64	304 42 10.0 11.7	III C 47.020	0 2 0.51	16 24 22.08	16 6419
55	9.3	31.0	32.9	35.2	37.4	39.5	c	3 35.20	304 42 " "	III A 45.820	0 3 4.06	16 15 3.61	16 6
56	9.5	25.3	27.5	29.4	31.1	33.3	a	4 59.22	304 42 " "	I A 41.330	0 4 28.07	16 16 28.16	16 11
57	9.4	58.0	0.3	2.0	4.1	6.2	c	5 2.12	305 8 10.0 11.5	III 46.910	0 4 30.98	15 51 57.04	16 12
58	6.0	37.5	39.4	41.8	43.9	46.0	c	6 41.72	304 58 10.0 11.1	III 49.860	0 6 10.57	16 1 1.20	16 17
59	9.4	50.3	52.7	54.6	57.0	59.2	c	7 54.76	304 58 " "	III C 47.060	0 7 23.59	16 8 21.22	16 23
60	9.3	22.5	24.8	26.9	29.2	31.4	c	8 26.96	304 58 " "	III B 48.025	0 7 55.79	−16 4 49.85	−16 25
61	9.3	45.9	48.0	50.4	52.5	56.5	c_2 d_1	8 48.08	304 58 " "	V 43.470	0 8 16.91	−16 3 5.34	−16 28
62	9.0	22.7	24.8	26.9	29.0	31.1	c	10 26.90	304 30 10.0 10.6	V C 46.380	0 9 55.68	16 36 37.22	16 37
63	.....	46.4	48.2	50.2	52.0	54.3	a	12 20.08	304 58 10.0 11.2	I 47.530	0 11 48.87	16 1 44.75	16 40
64	8.7	14.7	17.0	19.1	21.4	23.4	c	12 19.12	305 42 10.0 12.0	III 51.670	0 11 47.92	15 16 24.41	15 41
65	9.4	16.6	18.8	21.0	23.0	24.7	e	12 51.15	305 42 " "	V B 46.530	0 12 19.95	15 21 17.90	15 46
66	9.1	21.3	23.4	25.6	27.8	30.0	c	14 25.62	304 28 10.0 11.7	III 43.280	0 13 54.36	16 33 9.22	16 45
67	9.3	23.9	25.9	28.1	30.5	32.4	c	16 28.16	304 18 10.0 11.0	III 51.075	0 15 56.88	16 40 40.63	16 52
68	8.6	58.6	0.7	3.0	5.1	7.3	c	17 2.94	304 18 " "	III B 45.310	0 16 31.66	16 45 44.61	17 42
69	8.0	9.4	11.5	13.6	15.8	18.0	c	18 13.66	303 58 10.0 10.0	III C 50.590	0 17 42.35	17 7 18.19	17 45
70	9.1	11.0	13.4	15.5	17.8	19.9	c	19 15.52	303 58 " "	III (51).980	0 18 44.21	−17 0 25.01	−17 50
71	9.3	43.9	46.3	48.3	50.3	52.0	e	19 18.22	303 58 " "	VII C 51.710	0 18 46.91	−17 6 58.51	−17 51
72	8.0	21.4	23.6	25.8	30.1	31.7	c_3 d_2	20 21.46	304 24 10.0 10.5	V 50.370	0 19 50.15	16 34 55.81	16 63
73	6.	14.8	16.8	19.0	21.3	23.4	c	25 19.06	305 36 10.0 10.7	V 43.860	0 24 47.74	15 24 57.72	15 84
74	9.4	6.5	8.7	11.0	13.0	15.1	c	27 10.86	304 42 10.0 11.0	III B 48.370	0 26 39.49	16 20 45.70	16 85
75	9.3	48.8	51.0	53.0	55.3	57.5	c	30 53.12	304 28 10.0 11.0	III C 45.570	0 30 21.70	16 38 53.42	16 98
76	8.8	17.8	20.0	22.3	24.6	26.6	c	31 22.26	304 28 " "	V 49.025	0 30 50.84	16 31 22.32	16 101
77	8.5	58.7	0.7	2.7	5.0	7.2	c	33 2.86	304 38 10.0 10.6	III 44.960	0 32 31.42	16 22 38.88	16 105
78	8.9	9.2	11.3	13.6	15.8	17.9	c	34 13.56	304 48 10.0 10.8	III 44.430	0 33 42.12	16 12 48.61	16 109
79	6.8	25.0	27.0	28.8	30.8	33.0	a	35 58.94	303 54 10.0 10.7	I A 43.450	0 35 27.46	17 3 53.23	17 109
80	.....	45.2	47.2	49.3	51.1	53.5	a	38 19.22	304 24 10.0 10.4	I B 42.880	0 37 47.73	16 40 31.75	−16 119
81	9.0	24.2	26.3	28.5	30.9	32.9	c	38 28.56	304 24 " "	III 47.410	0 37 57.07	−16 35 53.29	−16 120
82	9.5	47.4	49.6	53.9	55.4	.....	c_4 d_2	38 45.24	304 24 " "	VII 46.100	0 38 13.75	16 36 20.94	16 122
83	9.3	9.3	11.3	13.5	15.8	18.0	c	40 13.58	305 4 10.0 10.5	V 46.940	0 39 42.11	15 56 1.87	16 126
84	9.4	31.8	33.8	35.9	38.1	40.5	c	42 36.02	305 4 " "	III 48.010	0 42 4.52	15 55 40.30	16 132
85	9.2	6.5	8.4	10.7	12.9	15.3	c	45 10.76	305 4 " "	III 45.720	0 44 39.24	15 56 24.58	16 137
86	9.2	25.2	27.5	29.6	31.7	33.9	c	46 29.58	305 14 10.0 10.9	III A 47.230	0 45 58.06	15 42 39.71	15 154
87	8.7	37.8	39.9	42.0	44.3	46.4	c	47 42.08	305 14 " "	III C 47.540	0 47 10.54	15 52 15.49	16 148
88	9.5	9.1	11.4	13.5	15.3	17.7	c	49 13.40	304 48 10.0 10.8	III 48.920	0 48 41.84	16 11 24.33	16 151
89	8.9	4.0	6.5	8.6	10.8	12.9	c	50 8.56	305 0 10.0 10.6	III 48.040	0 49 37.00	15 59 40.88	16 153
90	9.0	55.3	57.3	59.3	1.2	2.9	e	52 29.49	305 20 10.0 11.0	VII 47.460	0 51 57.92	−15 39 53.66	−15 172
91	9.1	23.2	25.0	27.2	29.5	31.5	c	53 27.28	305 20 " "	V B 40.000	0 52 55.69	−15 45 29.31	−15 176
92	9.2	20.2	22.5	24.6	26.8	28.9	c	54 24.60	305 20 " "	V 41.220	0 53 53.01	15 41 52.55	15 179
93	8.5	50.3	52.4	54.8	56.8	58.8	c	56 54.62	304 18 10.0 10.5	III C 42.480	0 56 22.95	16 49 56.85	17 177
94	6.8	8.1	10.3	12.5	14.6	16.9	c	57 12.48	304 18 " "	V C 48.360	0 56 40.81	16 48 5.17	17 180
95	9.0	59.5	1.7	3.8	6.0	8.3	c	58 3.86	304 18 " "	V 51.140	0 57 32.18	16 40 45.97	16 170
96	9.1	52.4	54.6	56.7	58.9	1.0	c	58 56.72	305 2 10.0 10.2	III 44.550	0 58 25.08	15 58 49.23	16 171
97	8.0	14.9	17.0	19.1	21.4	23.6	c	2 19.20	304 58 10.0 11.0	III 44.960	1 1 47.53	16 2 41.66	16 177
98	9.3	28.9	31.0	33.0	35.5	37.5	c	5 33.18	305 0 10.0 10.9	V 48.860	1 5 1.48	15 59 28.66	16 189
99	9.0	32.8	35.0	37.2	39.5	41.6	c	6 37.22	304 46 10.0 10.6	III 46.800	1 6 5.50	16 14 7.85	16 191
100	8.8	34.0	36.1	38.3	40.5	42.5	c	7 38.28	304 46 " "	III 49.340	1 7 6.54	−16 13 19.26	−16 196
101	8.3	19.7	21.9	24.0	26.1	28.3	c	9 24.00	305 8 10.0 11.0	III 46.450	1 8 52.28	−15 52 13.77	−16 200
102	8.8	44.1	46.2	48.4	50.6	52.6	c	9 48.38	304 20 10.0 11.3	V 48.580	1 9 16.61	16 39 36.50	16 201
103	7.0	25.5	27.7	29.8	32.0	34.2	c	10 29.84	304 40 10.0 10.4	V 44.720	1 9 58.08	16 20 50.16	16 206
104	9.0	51.9	53.8	55.7	57.6	0.0	a	12 25.53	305 52 10.0 10.6	I 44.620	1 11 53.82	15 8 45.99	15 238
105	9.0	27.6	29.7	31.9	34.0	36.1	c	12 31.86	305 24 10.0 10.6	III 48.400	1 12 0.13	15 35 36.31	15 239
106	8.9	52.8	55.0	57.2	59.3	3.5	c_2 d_1	12 54.98	304 56 10.0 10.9	V B 40.535	1 12 23.22	−16 9 23.34	−16 213

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
107	9.2	34.4	36.3	38.4	40.4	42.1	e	13 8.55	304 56 10.0 10.9	VII A 46.570	1 12 36.79	−16 1 0.17	−16 214
108	7.0	30.2	32.3	34.5	36.8	38.9	c	15 34.54	304 40 10.0 11.0	III 46.670	1 15 2.73	16 20 12.00	16 223
109	9.4	10.3	12.3	14.7	16.7	18.9	c	16 14.58	304 18 10.0 11.1	III 44.870	1 15 42.75	16 42 47.70	16 224
110	8.9	50.0	52.1	54.3	56.7	58.7	c	16 54.36	305 8 10.0 10.2	III 46.400	1 16 22.57	−15 52 16.44	−16 226
111	8.4	6.1	8.2	10.1	11.9	14.2	a	18 40.11	304 0 10.0 10.7	I 46.300	1 18 8.25	−17 0 20.27	−17 247
112	8.1	36.0	38.1	40.4	42.6	44.7	c	18 40.36	304 0 " "	III(B) 41.550	1 18 8.49	17 5 6.29	17 248
113	9.2	12.0	14.2	16.3	18.5	20.6	c	20 16.32	304 0 " "	III A 43.960	1 19 44.44	16 57 51.63	17 253
114	8.0	51.1	53.4	55.6	57.8	59.8	c	20 55.54	305 30 10.0 11.0	III 44.510	1 20 23.75	−15 30 52.00	−15 263

Reduction Elements. Zone 145.

1895.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
October 16.3	−0.110	+0.032	−0.440	−0.112	+0.026	−0.450
16.5	−0.115	+0.020	−0.460			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Mayer 911		*υ* Aquarii		*g* Aquarii		λ Aquarii		*h* Aquarii		Lalande 628	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	302 38 10.65		299 48 9.80		301 40 10.40		312 54 10.50		312 46 10.20		300 8 10.20	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.130	5 21.33	43.785	5 15.10	43.440	5 7.87	43.530	5 9.60	45.720	5 51.96	44.160	5 22.04
II Red. to Mer.	.165	0.18	.870	0.21	.485	0.19	.525	0.08	.795	0.08	.250	0.21
VI Inclination	.330		44.000		.585		.710		.930		.340	
VII Refraction	.340	1 28.5	.010	1 38.9	.645	1 31.9	.750	1 1.1	.910	1 1.4	.360	1 37.7

	22 Ceti		*η* Ceti		48 Ceti.	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	309 12 10.55		310 18 10.50		298 52 10.00	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.895	5 35.19	44.060	5 19.35	45.960	5 55.64
II Red. to Mer.	.900	0.12	.055	0.11	.930	0.22
VI Inclination	45.040		.200		46.055	
VII Refraction	.020	1 9.7	.235	1 7.1	.175	1 42.9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Mayer 911	21 57 11.09	11	− 0.50	−41.67	302 42 3.7	17.8
9 H. Draconis S. P	22 26 56.32	11	− 1.29	[−41.78]	64 48	...
υ Aquarii	22 29 43.35	11	− 0.52	−41.77	299 51 46.2	17.4
g Aquarii	22 38 42.61	11	− 0.51	−41.88	301 43 46.6	18.2
λ Aquarii	22 47 54.29	11	− 0.43	−41.90	312 58 19.1	17.4
h Aquarii	23 0 27.36	11	− 0.43	−41.86	312 51 0.8	18.0
Lalande 628	0 23 51.75	11	− 0.52	−41.90	300 11 54.7	17.7
22 Ceti	0 51 32.07	11	− 0.45	−42.02	309 16 36.2	17.2
η Ceti	1 4 4.90	11	− 0.45	−41.99	310 22 22.9	17.0
α Ursae Minoris	1 21 53.44	3	+11.44	[−41.60]	49 48	....
48 Ceti	1 25 20.45	11	− 0.53	−41.88	298 56 23.0	18.2

h 22.582 .... *dt* .... s −41.816

Hourly rate .... − 0.0560

Adopted Equator Point......... 321° 6′ 17″.66

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
22 0	29.506	55.1	53.2
23 24	29.506	54.5	52.5
0 59	29.462	53.0	51.1
1 29	29.456	52.8	50.4

Notes.

g Aquarii. Images somewhat unsteady

15. Images diffuse.

49. Images very unsteady. Seeing very bad all the evening.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1895.0				*R*			
			303°	304°	305°	306°	303°	304°	305°	306°	303° 30′	304°	305°	306°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
303	−0.500	23 0	......	+11.897	+11.885	+11.875	.....	−18.25	−18.50	−18.74	86.00	84.41	81.32	78.40
304	0.492	23 30	......	11.572	11.575	11.578	.....	20.45	20.67	20.88	86.04	84.45	81.36	78.43
305	0.484	0 0	......	11.265	11.282	11.300	.....	22.43	22.61	22.78	86.06	84.47	81.38	78.45
306	−0.477	0 30	+10.950	10.982	11.015	11.044	−24.02	24.15	24.29	24.42	86.08	84.49	81.40	78.47
		1 0	+10.682	10.727	10.772	10.817	−25.47	25.56	25.66	25.75	86.10	84.51	81.41	78.49
		1 30	......	+10.507	+10.565	+10.620	.....	−26.67	−26.72	−26.77	86.22	84.63	81.53	78.60

1895 OCTOBER 18. ZONE 146. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	5.	0.2	2.3	4.4	6.5	8.5	c	38 4.38	305 58 10.0 11.0	III B	44.590	23 37 32.23	−15 5 52.76	−15 6476
2	9.1	12.8	15.1	17.4	19.4	21.5	c	38 17.24	305 58 “ “	V C	48.290	23 37 45.09	15 7 55.80	15 6477
3	9.3	40.7	42.9	47.5	49.0	51.6	c_4 d_3	38 38.76	305 58 “ “	VI C	46.535	23 38 6.61	15 8 30.01	15 6480
4	8.6	46.2	48.6	50.8	52.9	55.0	c	39 50.70	305 58 “ “	V A	47.610	23 39 18.54	14 58 27.69	15 6487
5	6.8	16.2	18.2	20.0	22.0	24.4	a	45 49.89	305 58 “ “	I C	47.510	23 45 17.68	15 8 8.50	15 6505
6	8.0	40.3	41.9	46.2	48.3	50.5	b_2 c_3	45 50.46	305 28 10.0 11.1	III	45.570	23 45 18.24	15 32 22.24	15 6506
7	9.2	53.0	55.0	57.0	59.2	1.1	e	47 27.52	306 34 10.0 10.4	V	50.280	23 46 55.31	14 24 50.60	14 6564
8	8.0	7.3	9.5	11.6	13.6	15.7	c	51 11.54	306 34 “ “	III C	49.700	23 50 39.30	14 31 26.69	14 6579
9	8.0	54.3	56.5	58.6	0.8	3.0	c	53 58.64	306 26 10.0 10.7	III C	45.065	23 53 26.37	14 40 55.98	14 6588
10	9.0	26.4	28.6	30.6	32.9	35.0	c	54 30.70	306 26 “ “	III A	48.750	[23 53 58.43]	−14 30 3.74	−14 6590
11	9.0	31.9	34.0	35.8	37.7	40.0	a	59 5.54	306 22 10.0 11.2	I	44.900	23 58 33.22	−14 38 31.66	−14 6609
12	8.6	13.3	15.4	17.5	19.6	21.7	c	59 17.50	306 46 10.0 11.9	III	45.390	23 58 45.19	14 14 22.38	14 6611
13	8.3	47.3	49.4	51.6	53.9	55.8	c	0 51.60	306 0 10.0 10.8	III	50.840	0 0 19.26	14 58 40.49	15 6539
14	9.1	16.0	18.0	20.1	22.4	24.5	c	1 20.20	306 0 “ “	III	48.750	0 0 47.86	14 59 20.63	15 6542
15	9.1	11.7	13.7	15.8	18.0	20.1	c	3 15.86	305 6 10.0 10.5	III	48.700	0 2 43.47	15 53 24.36	16 2
16	9.0	11.4	13.5	15.7	17.9	20.2	c	4 15.74	305 18 10.0 11.6	III A	42.680	0 3 43.35	15 40 3.46	15 10
17	8.9	29.6	31.8	34.0	36.2	38.3	c	5 33.98	305 18 “ “	III	40.620	0 5 1.59	15 43 58.47	15 16
18	9.1	16.4	18.6	20.7	22.9	25.0	c	6 20.72	305 18 “ “	III B	44.860	0 5 48.32	15 45 50.42	16 15
19	8.6	36.2	38.3	40.4	42.6	44.7	c	7 40.44	305 18 “ “	III	42.870	0 7 8.03	15 43 15.40	15 22
20	8.9	9.8	11.9	13.6	15.5	17.8	a	9 43.43	306 0 10.0 10.4	I	47.120	0 9 11.02	−14 59 51.12	−15 28
21	7.5	51.0	53.0	55.3	57.5	59.7	c	9 55.30	306 0 “ “	III	49.700	0 9 22.88	−14 59 3.13	−15 30
22	6.8	11.1	13.2	15.4	17.6	19.8	c	10 15.42	306 20 10.0 11.4	V B	44.480	0 9 43.01	14 43 56.77	14 29
23	9.1	55.7	57.7	59.9	2.1	4.3	c	10 59.94	306 20 “ “	III C	45.875	0 10 27.53	14 46 41.41	15 34
24	9.0	27.3	29.5	31.6	33.8	35.8	c	11 31.60	306 20 “ “	III A	47.225	0 10 59.18	14 36 33.99	14 32
25	8.8	37.0	39.3	41.4	43.5	45.7	c	12 41.38	305 28 10.0 10.5	III	43.600	0 12 8.92	15 33 1.84	15 44
26	9.0	46.0	48.0	50.1	52.3	54.6	c	14 50.20	305 36 10.0 10.5	III	49.090	0 14 17.73	15 23 16.27	15 52
27	9.1	22.7	24.7	26.8	29.0	31.3	c	15 26.90	306 36 10.0 11.5	III	50.610	0 14 54.46	14 22 43.93	14 48
28	8.7	10.3	12.3	14.6	16.6	18.8	c	16 14.52	306 48 10.0 11 5	III	49.060	0 15 42.08	14 11 13.21	14 49
29	9.1	28.3	30.5	32.7	34.8	36.9	c	18 32.64	305 40 10.0 11.6	III	44.190	0 18 0.14	15 20 49.87	15 58
30	8.6	19.9	22.0	24.0	26.4	28.4	c	19 24.14	306 6 10.0 11.2	III	46.625	0 18 51.65	−14 54 2.24	−15 60
31	9.0	28.9	31.0	33.2	35.4	37.5	c	20 33.20	305 0 10.0 11.5	III	47.170	0 20 0.66	−15 59 54.77	−16 64
32	9.0	18.0	20.0	21.8	23.8	26.0	a	21 51.54	306 40 10.0 11.8	I	46.625	0 21 19.05	14 19 59.12	14 64
33	9.2	53.7	55.8	58.0	0.2	2.2	c	21 57.98	306 40 “ “	III	50.070	0 21 25.48	14 18 54.50	14 66
34	9.0	0.1	2.2	4.3	6.6	8.7	c	23 4.38	305 0 10.0 11.8	III	45.400	0 22 31.82	16 0 28.84	16 75
35	8.1	39.2	41.4	43.6	45.8	47.8	c	24 43.56	305 22 10.0 11.1	III	49.680	0 24 11.01	15 37 6.16	15 78
36	8.7	52.8	55.0	57.0	59.2	1.5	c	25 57.10	305 22 “ “	III B	48.910	0 25 24.53	15 40 34.33	15 86
37	9.1	34.9	37.0	39.2	41.4	43.5	c	30 39.20	305 42 10.0 11.7	III B	42.140	0 30 6.60	15 22 43.52	15 103
38	8.7	4.5	6.7	8.7	11.0	13.3	c	31 8.84	305 42 “ “	III	49.310	0 30 36.24	15 17 12.67	15 105
39	9.0	22.6	24.8	27.0	29.0	31.3	c	31 26.94	304 58 10.0 12.0	V	50.020	0 30 54.32	16 1 2.37	16 102
40	9.0	56.6	58.7	0.8	3.0	5.0	c	35 0.82	306 50 10.0 10.7	III	46.260	0 34 28.24	−14 10 9.03	−14 107
41	8.9	7.7	9.9	12.1	14.4	16.4	c	36 12.10	305 8 10.0 10.6	III	45.530	0 35 39.44	−15 52 26.94	−16 115
42	9.4	35.5	37.6	39.7	42.0	44.0	c	37 39.76	305 8 “ “	III B	49.090	0 37 7.09	15 54 33.08	16 117
43	9.1	59.8	2.0	4.1	6.4	8.3	c	41 4.12	305 44 10.0 11.0	III	45.510	0 40 31.44	15 16 27.00	15 136
44	9.1	24.4	26.5	28.6	31.0	33.3	c	42 28.76	305 44 “ “	III B	49.510	0 41 56.07	15 18 23.70	15 139
45	9.0	27.8	30.0	32.0	34.4	36.5	c	46 32.14	306 24 10.0 11.0	III	42.830	0 45 59.46	14 37 17.26	14 148
46	8.9	13.4	15.5	17.7	19.9	22.0	c	47 17.70	306 38 10.0 11.6	III A	44.030	0 46 45.03	14 19 38.01	14 150
47	8.0	45.2	47.3	49.5	51.7	53.7	c	47 49.48	306 38 “ “	III B	41.280	0 47 16.80	14 26 59.52	14 154
48	8.2	10.2	12.4	14.5	16.7	18.8	c	49 14.52	306 38 “ “	III C	48.810	0 48 41.83	14 27 48.11	14 162
49	9.0	27.7	29.9	32.0	34.3	36.4	c	49 32.06	305 50 10.0 11.4	V	45.650	0 48 59.33	15 10 26.26	15 163
50	8.8	2.2	4.3	6.5	8.8	10.9	c	52 6.54	305 50 “ “	III B	49.360	0 51 33.79	−15 12 27.35	−15 171
51	9.0	38.3	40.2	42.5	44.6	46.8	c	53 42.48	306 22 10.0 11.7	III	50.230	0 53 9.75	−14 36 55.96	−14 172
52	8.8	13.4	15.6	17.7	19.8	22.0	c	54 17.70	306 22 “ “	III B	46.570	0 53 44.96	14 41 19.57	14 173
53	8.7	47.9	50.0	52.0	54.0	55.8	e	54 22.43	306 48 10 0 11.8	VII	46.940	0 53 49.71	14 12 0.47	14 174
54	8.9	8.5	10.4	12.7	14.9	17.0	c	1 12.70	305 56 10.0 10.7	III	49.420	1 0 39.88	15 3 14.31	15 196
55	9.0	26.8	29.0	31.0	33.2	35.4	c	2 31.08	306 20 10.0 11.5	III	47.600	1 1 58.28	14 39 47.93	14 212
56	8.8	10.7	12.8	14.9	17.2	19.3	c	3 14.98	306 20 “ “	III B	49.980	1 2 42.18	14 42 15.64	14 216
57	8.9	56.4	58.6	0.7	2.9	5.0	c	4 0.72	305 18 10.0 10.7	III	44.900	1 3 27.85	15 42 43.29	15 206
58	9.0	42.0	44.2	46.3	48.5	50.8	c	9 46.36	305 26 10.0 11.0	III	50.740	1 9 13.47	15 32 51.64	15 230
59	8.6	42.4	44.6	46.7	49.0	51.0	c	10 46.74	305 26 “ “	III C	46.325	1 10 13.84	15 40 42.73	15 233
60	8.9	34.8	36.8	38.9	41.0	43.3	c	12 38.96	306 18 10.0 10.7	III	44.430	1 12 6.10	−14 42 50.93	−14 248
61	9.0	45.3	47.4	49.5	51.7	53.9	c	14 49.56	305 52 10.0 11.0	III	45.210	1 14 16.66	−15 8 37.40	−15 245
62	8.8	44.0	46.4	48.4	50.7	52.8	c	18 48.46	306 20 10.0 11.1	III A	42.800	1 18 15.56	14 38 7.61	14 268
63	8.0	58.4	0.6	2.8	5.0	7.0	c	19 2.76	306 20 “ “	V B	45.460	1 18 29.86	14 43 46.80	14 269
64	9.1	35.0	37.2	38.9	40.7	43.1	a	21 8.73	305 50 10.0 11.0	I C	49.840	1 20 35.77	15 15 34.62	15 264
65	5.5	10.8	13.9	15.0	17.2	19.3	c	21 15.04	305 50 “ “	III A	46.020	1 20 42.09	15 7 7.74	15 266
66	9.0	49.7	51.8	53.9	56.2	58.2	c	21 53.96	306 36 10.0 11.6	III	44.490	1 21 21.05	14 24 50.12	14 281
67	9.0	29.2	31.4	33.5	35.7	37.7	c	24 33.50	306 26 10.0 10.6	III A	40.040	1 24 0.58	14 33 1.62	14 286
68	8.7	4.2	6.3	8.4	10.6	12.7	c	26 8.44	306 26 “ “	III	42.750	1 25 35.51	14 35 25.31	14 290
69	9.1	18.6	20.9	23.0	25.0	27.3	c	26 22.96	306 26 “ “	V C	45.130	1 25 50.02	14 41 7.01	14 292
70	8.3	47.5	49.6	51.6	53.8	56.0	c	27 51.70	306 0 10.0 10.8	III	46.020	1 27 18.74	−15 0 24.00	−15 279

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
71	8.6	7.0	9.2	11.2	13.6	15.6	c	28 11.32	305 2 10.0 11.0	V	47.920	1 27 38.29	−15 57 51.65	−16 259
72	6.0	13.3	15.4	17.7	19.8	21.9	c	30 17.62	304 56 10.0 10.7	III C	44.700	1 29 44.56	16 11 19.19	16 265
73	9.4	44.7	46.7	49.0	51.2	53.3	c	31 48.98	304 56 " "	III C	45.120	1 31 15.90	16 11 11.42	16 272
74	8.9	11.7	13.7	15.7	17.5	19.8	a	32 45.54	304 56 " "	I A	44.750	1 32 12.48	16 1 35.41	16 275
75	9.1	45.6	47.8	49.9	52.1	54.3	c	32 49.94	304 56 " "	III	42.155	1 32 16.87	16 5 42.34	16 277
76	9.0	26.5	28.7	30.7	33.0	35.0	c	33 30.78	305 34 10.0 11.2	III	44.560	1 32 57.75	15 26 54.19	15 291
77	9.0	4.2	6.3	8.5	10.7	12.8	c	35 8.50	305 48 10.0 10.9	III	44.870	1 34 35.47	15 12 48.08	15 293
78	8.3	25.0	27.3	29.4	31.7	33.9	c	36 29.46	305 38 10.0 11.2	III	41.590	1 35 56.41	15 23 51.63	15 297
79	9.3	10.2	12.4	14.6	16.8	18.9	c	37 14.58	305 52 10.0 11.1	III	48.530	1 36 41.54	15 7 37.97	15 299
80	9.0	13.4	15.5	17.7	19.9	22.0	c	39 17.70	306 16 10.0 11.4	III C	48.120	1 38 44.68	−14 50 11.16	−15 305
81	9.1	44.2	46.3	48.5	50.7	52.9	c	39 48.52	306 16 " "	III A	43.890	1 39 15.50	−14 41 50.90	−14 326
82	7.8	44.9	47.1	49.3	51.4	53.5	c	40 49.24	305 56 10.0 10.5	III	48.010	1 40 16.18	15 3 48.82	15 307
83	9.2	1.5	3.6	5.8	8.0	10.2	c	42 5.82	306 22 10.0 11.1	III	49.550	1 41 32.79	14 37 18.00	14 332
84	9.2	38.6	40.8	42.9	45.0	47.1	c	43 42.88	306 22 " "	III B	44.770	1 43 9.84	14 42 3.37	14 336
85	8.7	43.3	45.4	47.6	49.8	51.8	c	44 47.58	304 56 10.0 11.4	III	45.285	1 44 14.45	16 4 44.45	16 310
86	9.3	2.4	4.7	6.8	8.9	11.0	c	45 6.76	304 56 " "	III B	42.180	1 44 33.62	16 8 57.42	16 312
87	8.0	20.8	22.9	25.2	29.4	31.0	c_3 d_2	45 20.85	306 16 10.0 11.3	V	48.550	1 44 47.81	14 43 39.43	14 337
88	9.0	47.0	49.1	51.2	53.6	55.7	c	46 51.32	306 4 10.0 10.6	III A	45.320	1 46 18.26	14 53 25.93	15 326
89	9.1	0.6	2.8	4.9	7.2	9.3	c	48 4.96	306 4 " "	III A	45.490	1 47 31.89	14 53 22.93	15 332
90	8.8	10.1	12.3	14.4	16.6	18.7	c	48 14.42	306 4 " "	V C	48.660	1 47 41.33	−15 2 4.85	−15 334
91	8.2	43.0	45.2	47.3	49.5	51.7	c	48 47.34	306 4 " "	V	43.860	1 48 14.26	−14 57 11.10	−15 336
92	8.3	14.5	16.6	18.8	21.0	23.1	c	50 18.80	306 36 10.0 11.2	III	46.350	1 49 45.75	14 24 20.50	14 356
93	9.1	53.4	55.5	57.8	0.0	2.2	c	50 57.78	304 58 10.0 11.0	III	49.180	1 50 24.61	16 1 31.18	16 332
94	9.0	38.2	40.2	42.5	44.6	46.8	c	53 42.46	306 14 10.0 11.1	III	46.520	1 53 9.38	14 46 19.10	14 366
95	8.0	8.7	10.8	12.9	15.1	17.2	c	55 12.94	306 40 10.0 11.5	III	42.750	1 54 39.87	14 21 30.38	14 371
96	9.2	33.4	35.5	37.6	39.8	42.0	c	58 37.66	306 4 10.0 11.0	III	46.040	1 58 4.52	14 56 29.97	15 358
97	9.0	30.6	32.7	34.9	37.0	39.3	c	59 34.90	306 4 " "	III	46.140	1 59 1.76	14 56 28.29	15 363
98	9.0	22.1	24.3	26.4	28.5	30.7	c	0 26.40	306 26 10.0 10.5	III	47.880	1 59 53.29	14 33 54.30	14 387
99	8.7	23.6	25.7	27.9	30.0	32.2	c	1 27.88	306 26 " "	III B	49.230	2 0 54.76	14 36 41.91	14 391
100	8.4	14.9	17.0	19.1	21.4	23.3	c	2 19.14	306 4 10.0 11.0	III	46.680	2 1 45.98	−14 56 18.58	−15 367
101	9.3	47.6	49.7	51.9	54.0	56.0	c	2 51.84	306 14 10.0 11.4	III C	47.070	2 2 18.70	−14 52 36.72	−15 368
102	8.8	37.5	39.7	41.9	44.0	46.1	c	3 41.84	306 14 " "	III A	45.030	2 3 8.71	14 43 34.50	14 398
103	9.0	8.9	10.8	13.0	15.2	17.5	c	7 13.08	306 8 10.0 10.7	III	44.025	2 6 39.93	14 53 10.68	15 382
104	9.2	21.1	23.3	25.5	27.7	29.7	c	7 25.46	506 8 " "	V B	47.490	2 6 52.30	14 55 19.05	15 383
105	9.0	4.6	6.7	8.7	10.9	13.1	c	11 8.80	305 14 10.0 10.6	III	43.530	2 10 35.55	15 47 23.87	15 393
106	8.9	46.0	48.1	50.4	52.6	54.7	c	11 50.36	305 50 10.0 10.6	III	45.620	2 11 17.15	15 10 42.15	15 396
107	9.1	44.8	47.0	49.0	51.3	53.4	c	12 49.10	305 4 10.0 10.9	III	46.690	2 12 15.84	15 56 24.00	16 417
108	9.2	47.8	49.9	52.0	54.1	56.4	c	13 52.04	305 4 " "	III B	48.450	2 13 18.77	15 59 3.78	16 422
109	9.0	50.2	52.3	54.5	56.7	58.9	c	14 54.52	306 14 10.0 11.0	III	47.700	2 14 21.34	14 46 1.64	14 426
110	9.1	27.8	29.9	32.0	34.1	36.4	c	15 32.04	306 14 " "	III	41.990	2 14 58.86	−14 47 51.39	−15 400
111	8.2	49.3	51.4	53.6	55.6	57.7	c	15 53.52	306 14 " "	V C	47.490	2 15 20.33	−14 52 33.28	−15 401
112	9.0	22.5	24.7	26.8	29.0	33.3	c_2 d_1	17 24.69	305 56 10.0 10.4	V	43.030	2 16 51.47	15 5 34.41	15 408
113	9.0	55.4	57.5	59.4	1.2	3.5	a	17 29.10	306 6 10.0 9.9	I	44.240	2 16 55.90	14 55 8.11	15 410
114	9.1	19.3	21.4	23.4	25.6	27.7	c	19 23.48	306 26 10.0 10.5	III	48.580	2 18 50.30	14 33 45.58	14 444
115	8.9	10.0	12.2	14.0	15.9	18.3	a	22 43.78	306 4 10.0 11.0	I	47.500	2 22 10.54	14 56 6.45	15 430
116	9.2	49.6	51.8	53.9	56.3	58.4	c	22 54.00	306 4 " "	III B	41.025	2 22 20.76	15 1 25.58	15 431
117	9.3	19.6	21.8	24.0	26.0	28.2	c	24 23.92	306 4 " "	III B	45.500	2 23 50.68	15 0 0.10	15 435
118	8.6	9.2	11.0	12.9	14.7	17.0	a	25 42.59	306 36 10.0 11.5	I	44.320	2 25 9.40	14 25 6.49	14 468
119	9.2	47.8	49.9	52.0	54.2	56.4	c	25 52.06	305 56 10.0 10.5	III	46.930	2 25 18.85	15 4 20.41	15 439
120	8.0	47.7	49.8	51.9	54.0	56.3	c	26 51.94	305 26 10.0 10.5	III	45.900	2 26 18.65	−15 34 41.93	−15 442
121	9.3	22.8	25.0	27.0	28.9	30.8	e	26 57.20	305 26 " "	V B	49.675	2 26 23.91	−15 36 44.32	−15 443
122	9.2	38.8	41.2	43.2	45.4	47.6	c	27 43.24	305 26 " "	V	51.160	2 27 9.95	15 33 2.56	15 448
123	9.0	47.6	49.7	52.0	54.3	56.3	c	28 51.98	305 56 10.0 11.5	III B	41.130	2 28 18.71	15 9 25.31	15 451
124	8.9	52.1	54.1	56.3	58.6	0.8	c	29 56.38	305 56 " "	III	49.110	2 29 23.12	15 3 39.17	15 455
125	8.8	50.2	52.4	54.5	56.8	58.9	c	30 54.56	304 58 10.0 11.5	III	50.530	2 30 21.22	16 1 15.10	16 465
126	8.1	22.7	24.9	27.0	29.0	31.4	c	31 27.00	305 36 10.0 10.8	III	51.950	2 30 53.71	15 22 46.42	15 458
127	8.3	17.8	19.9	22.1	24.4	26.5	c	32 22.14	305 58 10.0 11.0	III B	47.260	2 31 48.87	15 5 28.80	15 461
128	9.0	30.9	33.2	35.3	37.5	39.7	c	33 35.32	305 58 " "	III	47.690	2 33 2.05	15 2 7.59	15 464
129	9.1	16.6	18.7	20.9	23.0	25.3	c	34 20.90	306 16 10.0 11.6	III	48.420	2 33 47.66	14 43 52.60	14 495
130	8.8	7.0	9.2	11.0	13.4	15.5	c	35 11.22	306 16 " "	III	51.580	2 34 37.98	−14 42 52.19	−14 497
131	9.0	33.0	35.2	37.2	39.5	41.6	c	35 37.30	306 16 " "	III	53.050	2 35 4.06	−14 42 24.09	−14 498
132	8.3	14.6	16.8	18.9	21.1	23.2	c	37 18.92	305 28 10.0 10.1	III	49.540	2 36 45.60	15 31 35.05	15 477
133	5.5	50.7	52.9	55.0	57.1	59.3	c	39 55.00	306 42 10.0 11.0	III	51.430	2 39 21.78	14 16 55.43	14 519
134	9.1	11.0	13.1	15.1	17.3	19.5	c	41 15.20	306 42 " "	III C	47.180	2 40 41.96	14 24 43.58	14 524
135	8.9	19.0	21.3	23.3	25.5	27.5	c	42 23.32	306 42 " "	III B	40.580	2 41 50.08	14 23 37.67	14 527
136	9.5	43.8	46.0	47.9	50.2	52.3	c	42 48.04	306 42 " "	III B	42.830	2 42 14.80	14 22 54.59	14 529
137	9.2	25.0	27.0	28.9	30.7	33.0	a	44 58.66	305 52 10.0 11.0	I B	40.960	2 44 25.34	15 13 31.85	15 497
138	9.0	2.7	4.8	7.0	9.2	11.3	c	45 7.00	305 52 " "	III A	41.560	2 44 33.69	15 6 53.40	15 498
139	9.1	15.1	17.3	19.5	21.7	23.8	c	46 19.48	306 6 10.0 11.1	III	45.900	2 45 46.20	14 54 45.12	15 502
140	9.2	24.0	26.2	28.3	30.6	32.6	c	49 28.34	305 6 10.0 10.6	III	47.790	2 48 54.95	−15 54 13.05	−16 524
141	9.3	0.6	2.8	4.8	7.0	9.2	c	51 4.88	306 2 10.0 10.9	III	48.980	2 50 31.58	−14 57 47.69	−15 517
142	8.2	15.3	17.5	19.8	21.9	24.0	c	52 19.70	305 36 10.0 10.0	III	44.530	2 51 46.35	15 25 15.23	15 519
143	9.0	47.9	50.1	52.3	54.5	56.6	c	52 52.28	304 52 10.0 11.0	III	49.710	2 52 18.87	−16 7 37.72	−16 534

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°	
144	8.4	49.8	51.8	54.0	56.1	58.3	c	53 54.00	304 52 10.0 11.0	III C	48.040	2 53 20.56	−16 14 36.32	−16	538
145	9.4	16.0	18.2	20.4	22.6	24.7	c	54 20.38	304 52 " "	III B	48.210	2 53 46.96	16 11 20.25	16	539
146	9.3	24.4	26.5	28.7	30.8	33.0	c	55 28 68	305 46 10.0 11.1	III	49.420	2 54 55.33	15 13 41.27	15	526
147	9.5	30.7	32.9	35.0	37.0	39.3	c	57 34.98	305 46 " "	III	50.840	2 57 1.63	15 13 14.64	15	531
148	9.0	8.4	10.4	12.8	14.9	17.0	c	58 12.70	306 20 10.0 11.2	III	52.190	2 57 39.41	14 38 47.19	14	589
149	9.1	28.7	30.8	33.0	35.2	37.4	c	58 33.02	305 58 10.0 11.0	V	51.020	2 57 59.68	15 1 12.27	15	533
150	9.6	3.4	5.6	7.7	10.0	12.0	c	0 7.74	306 14 10.0 11.2	V B	41.280	2 59 34.42	−14 51 32.29	−15	536
151	8.3	51.0	53.0	55.2	57.4	59.7	c	0 55.26	306 14 " "	III	44.310	3 0 21.95	−14 47 19.55	−14	598
152	9.1	10.4	12.6	14.7	16.8	18.8	c	1 14.66	306 14 " "	V A	43.890	3 0 41.35	14 44 13.82	14	599
153	9.1	0.1	2.3	4.4	6.5	8.6	c	5 4.38	304 56 10.0 10.5	III	50.110	3 4 30.95	16 3 33.81	16	573
154	9.0	55.0	57.1	59.4	1.5	3.5	c	5 59.30	304 56 " "	III	49.640	3 5 25.86	16 3 43.11	16	578
155	8.9	15.2	17.3	19.5	21.7	23.7	c	6 19.48	304 56 " "	III	49.580	3 5 46.04	16 3 44.38	16	581
156	8.8	4.9	7.0	9.3	11.5	13.5	c	7 9.24	304 56 " "	III B	48.995	3 6 35.80	16 7 9.17	16	586
157	8.2	34.6	36.8	39.0	41.2	43.3	c	7 38.98	305 42 10.0 11.6	III	48.100	3 7 5.61	15 18 10.28	15	554
158	9.1	7.5	9.6	11.3	13.3	15.6	a	10 41.26	305 22 10.0 10.8	I	48.150	3 10 7.85	15 38 10.17	15	563
159	9.3	45.8	47.7	50.0	52.2	54.4	c	10 50.02	305 0 10.0 10.5	III	46.475	3 10 16.58	16 0 45.18	16	600
160	9.0	41.4	43.7	45.7	48.0	50.0	c	11 45.76	306 30 10.0 10.8	III	45.880	3 11 12.46	−14 30 52.22	−14	632
161	9.3	41.8	43.9	46.0	48.0	49.7	e	17 16.16	305 18 10.0 11.2	VII	50.340	3 16 42.74	−15 41 34.25	−15	583
162	8.3	18.8	21.0	23.0	25.0	26.9	e	17 53.21	305 18 " "	V C	47.030	3 17 19.77	15 49 2.89	15	584
163	8.4	43.0	45.0	46.7	48.6	50.9	a	20 16.46	306 40 10.0 11.4	I	46.000	3 19 43.16	14 20 50.33	14	661
164	9.3	28.2	30.2	32.4	34.6	36.7	c	20 32.42	306 0 10.0 10.9	III	47.200	3 19 59.06	15 0 31.11	15	594
165	9.3	37.6	39.7	41.9	44.0	46.2	c	22 41.88	306 16 10.0 11.0	III	44.540	3 22 8.54	14 45 22.02	14	675
166	8.5	30.0	32.5	34.5	36.6	38.7	c	23 34.46	306 16 " "	III A	42.240	3 23 1.13	−14 42 51.06	−14	677

Reduction Elements. Zone 146.

1895.	OBSERVED.			ADOPTED.		
	c	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 18.4....	−0.103	+0.024		−0.089	+0.038	−0.533
18.6....	−0.075	+0.052	−0.533			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		b^1 Aquarii		b^3 Aquarii		Mayer 974		i^2 Aquarii		τ^4 Eridani		Lalande 6476	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		300 22 10.55		299 32 9.90		312 58 10.55		301 32 10.15		298 54 10.40		308 0 10.55	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	44.950	5 37.90	47.530	6 26.38	48.580	6 46.46		6 28.13	45.930	5 55.65	44.910	5 36.27
II	Red to Mer......	45.030	0.21	.550	0.21	.605	0.08	47.765*	0.17	.945	0.22	.970	0.13
VI	Inclination	.220		.720		.750		.710	-0.67	46.115		45.085	
VII	Refraction.......	.220	1 38.9	.735	1 42.2	.785	1 2.3	.700	1 34.4	.135	1 45.3	.115	1 14.6

		ε Eridani		Lalande 7685	
		° ′ ″		° ′ ″	
CIRCLE READING.		311 14 10.40		302 42 10.30	
		r	′ ″	r	′ ″
I	Microm. Eq......	42.555	4 50.98	46.400	6 4.35
II	Red. to Mer......	.585	0.10	.435	0.18
VI	Inclination	.745		.525	
VII	Refraction.......	.750	1 6.6	.575	1 30.7

*Z. D. Micrometer readings discordant; note states that they were carefully read by the recorder.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
b^1 Aquarii	23 18 15.16	11	−0.56	−43.12	300 26 9.8	16.8
b^3 Aquarii	23 28 34.78	11	−0.57	−43.13	299 36 54.3	16.5
Mayer 974..........	23 30 54.60	11	−0.46	43.19	313 3 54.8	16.7
i^2 Aquarii	23 46 43.82	11	−0.56	−43.17	301 37 3.4	17.6
τ^4 Eridani	3 15 38.15	11	−0.58	−43.02	298 58 21.0	17.9
Lalande 6476	3 25 25.73	11	−0.50	−43.04	308 4 32.4	17.2
ε Eridani	3 28 46.29	11	−0.47	−43.10	311 17 54.9	18.2
Lalande 7685	4 2 41.64	11	−0.54	−42.96	302 46 44.1	17.8
Groombridge 750 ..	4 4 42.92	7	+3.92	[−43.03]	46 20	....

h 23.520............ *dt*. .... s −43.152

Hourly rate .... + 0.0303

Adopted Equator Point......... 321° 6′ 17″.34

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
23 7	29.936	51.3	49.2
23 59	29.928	50.8	48.6
0 58	29.914	50.8	48.9
1 55	29.900	49.9	47.5
2 55	29.882	48.4	46.2
3 30	29.880	48.1	45.6
3 59	29.868	48.0	45.4

Notes.

8. Images somewhat unsteady.
17 Images quite steady now.
27. Double, mean observed; equal components.
66. Double, following observed.
163. Faint close companion preceding ε Eridani. Star images very good.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1895.0				*R*			
			304°	305°	306°	307°	304°	305°	306°	307°	304°30′	305°	306°	307°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
304	−0.533	23 30	......	+11.595	+11.596	+11.599	.....	−20.45	−20.68	−20.90	84.68	83.12	80.13	77.27
305	0.524	0 0	......	11.295	11.312	11.329	.....	22.37	22.55	22.73	84.72	83.16	80.17	77.30
306	0.516	0 30	......	11.021	11.052	11.082	.....	24.02	24.16	24.31	84.66	83.10	80.11	77.25
307	−0.507	1 0	......	10.773	10.817	10.860	.....	25.39	25.49	25.59	84.61	83.04	80.06	77.20
		1 30	+10.501	10.558	10.615	10.670	−26.37	26.43	26.49	26.56	84.72	83.16	80.17	77.30
		2 0	10.307	10.378	10.445	10.513	27.12	27.15	27.17	27.19	84.84	83.27	80.28	77.41
		2 30	10.157	10.238	10.314	10.392	27.53	27.51	27.49	27.46	84.92	83.35	80.35	77.48
		3 0	+10.048	10.137	10.224	10.310	−27.59	27.54	27.47	27.41	85.02	83.44	80.44	77.57
		3 30	......	+10.079	+10.173	+10.266	.....	−27.21	−27.11	−27.01	85.09	83.52	80.52	77.64

1895 OCTOBER 21. ZONE 147. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.0	5.3	7.4	9.3	11.0	13.5	a	47 39.30	304 4 10.0 10.1	I 42.810	23 47 4.85	−16 57 18.82	−17 6834
2	9.1	45.3	46.8	51.0	53.1	55.5	b_2 c_3	47 55.40	304 4 " "	III A 49.550	23 47 20.95	16 51 55.63	17 6835
3	8.0	......	4.7	6.9	9.1	11.2	c	48 6.89	304 4 " "	V 47.535	23 47 32.44	16 55 51.03	17 6836
4	9.1	48.8	51.0	53.0	54.8	56.7	e	48 22.94	304 4 " "	V C 47.905	23 47 48.48	17 2 9.95	17 6838
5	9.1	40.9	43.0	45.0	47.4	49.4	c	49 45.14	304 48 10.0 11.0	III 47.845	23 49 10.69	16 11 41.18	16 6385
6	9.3	2.3	4.5	6.7	9.0	11.2	c	52 6.74	303 28 10.0 10.2	III B 41.860	23 51 32.24	17 36 53.86	17 6848
7	9.1	18.4	20.5	22.7	25.0	27.0	c	53 22.72	303 28 " "	III B 49.510	23 52 48.20	17 34 27.12	17 6850
8	......	41.8	43.9	46.0	48.3	50.5	c	54 46.10	303 28 " "	III A 43.170	23 54 11.56	17 30 0.18	17 6856
9	8.0	48.2	50.3	52.6	54.7	56.9	c	55 52.54	303 44 10.0 10.4	III 49.650	23 55 17.99	17 15 10.34	17 6860
10	9.3	25.6	27.7	29.6	32.0	34.0	c	56 29.78	303 44 " "	III C 45.400	23 55 55.22	−17 22 58.15	−17 6861
11	9.3	57.8	0.1	1.9	3.8	6.1	a	57 31.90	304 18 10.0 10.9	I 45.270	23 56 57.34	−16 42 30.97	−16 6405
12	7.5	12.8	15.0	17.0	19.0	20.7	e	59 46.97	304 0 10.0 10.6	VII B 41.480	23 59 12.38	17 5 2.62	17 6868
13	9.2	46.8	48.8	51.0	53.3	55.4	c	1 51.06	304 0 " "	III A (40).635	0 1 16.45	16 58 47.43	17 6874
14	9.1	21.0	23.0	25.1	27.1	29.0	e	1 55.07	303 42 10.0 10.2	VII 48.290	0 1 20.46	17 17 39.50	17 6875
15	9.0	44.2	46.4	48.5	50.7	52.9	c	5 48.54	303 42 " "	III B 50.110	0 5 13.89	17 20 15.66	17 10
16	9.0	31.6	33.8	36.0	38.2	40.3	c	7 35.98	304 42 10.0 10.5	III C 48.740	0 7 1.34	16 23 51.82	16 20
17	9.2	29.8	31.8	33.7	35.6	37.8	a	9 3.64	304 42 " "	I A 43.025	0 8 28.99	16 15 58.30	16 29
18	9.4	41.6	44.0	46.0	48.0	49.6	e	10 16.01	304 34 10.0 11.0	VII 44.290	0 9 41.34	16 26 53.84	16 34
19	9.0	7.5	9.6	11.7	14.0	16.2	c	14 11.80	303 26 10.0 10.8	III 43.410	0 13 37.06	17 35 12.14	17 35
20	9.3	30.4	32.5	34.8	36.9	38.9	c	15 34.70	304 12 10.0 10.8	III 44.040	0 14 59.96	−16 48 57.78	−17 38
21	9.3	28.1	30.2	32.0	34.0	36.2	a	18 2.22	303 20 10.0 10.3	I 46.500	0 17 27.43	−17 40 12.18	−17 43
22	9.0	21.7	24.0	26.0	28.2	30.4	c	18 26.06	303 44 10.0 11.3	III A 44.055	[0 17 51.28]	17 13 43.55	17 46
23	9.1	34.5	36.7	39.0	41.2	43.4	c	18 38.96	303 44 " "	V C 44.580	0 18 4.18	17 23 16.25	17 48
24	9.1	38.0	40.2	42.2	44.3	46.5	c	19 42.24	303 44 " "	III C 45.360	0 19 7.44	17 23 0.22	17 53
25	9.2	10.0	12.3	14.3	16.2	18.0	e	19 44.18	303 44 " "	V B 46.510	0 19 9.39	17 19 26.76	17 54
26	9.1	12.5	14.6	17.0	19.2	21.3	c	23 16.92	303 12 10.0 10.7	III B 41.330	0 22 42.07	17 53 7.01	18 62
27	9.2	5.5	7.7	9.9	12.0	14.1	c	24 9.84	303 12 " "	III A 41.765	0 23 34.99	17 46 30.02	18 64
28	9.0	31.7	33.9	36.2	38.5	40.7	c	24 36.20	303 12 " "	III A 42.780	0 24 1.34	17 46 10.58	18 67
29	9.0	14.0	16.2	18.4	20.6	22.7	c	25 18.38	303 12 " "	III A 44.610	0 24 43.52	17 45 35.54	18 70
30	9.2	11.9	14.2	16.2	18.7	20.8	c	26 16.36	304 44 10.0 10.6	III 41.970	0 25 41.54	−16 17 37.03	−16 82
31	8.5	45.0	47.3	49.5	51.7	53.8	c	26 49.46	303 40 10.0 11.5	III 44.880	0 26 14.60	−17 20 44.04	−17 70
32	9.3	55.7	57.7	59.5	1.4	3.7	a	29 29.64	303 48 10.0 10.7	I 48.770	0 28 54.75	17 11 28.11	17 77
33	9.2	37.2	39.5	41.6	43.7	45.9	c	29 41.58	303 48 " "	III B 43.400	0 29 6.69	17 16 26.04	17 78
34	9.0	5.0	7.0	9.3	11.5	13.6	c	30 9.28	303 20 10.0 9.5	III 46.540	0 29 34.37	17 40 14.58	17 81
35	8.9	56.1	58.5	0.7	3.0	4.9	c	32 0.64	304 12 10.0 10.4	III 46.010	0 31 25.74	16 48 21.82	17 90
36	8.7	21.9	24.0	26.2	28.3	30.5	c	33 26.18	303 46 10.0 11.0	III 49.520	0 32 51.26	17 13 15.64	17 95
37	8.9	21.4	23.5	25.6	27.7	29.9	c	34 25.62	303 46 " "	III B 45.570	0 33 50.68	17 17 44.87	17 103
38	8.8	16.5	18.6	20.7	22.9	25.0	c	35 20.74	304 8 10.0 10.8	III 45.340	0 34 45.81	16 52 35.05	17 106
39	9.0	25.4	27.6	29.7	32.0	34.0	c	36 29.74	303 8 10.0 10.4	III 51.030	0 35 54.77	17 50 49.33	18 108
40	8.7	6.5	8.6	10.7	12.9	15.1	c	38 10.76	303 44 10.0 10.5	III 49.980	0 37 35.79	−17 15 7.73	−17 116
41	8.6	18.6	20.8	22.9	25.0	27.2	c	39 22.90	304 8 10.0 10.7	III 48.420	0 38 47.93	−16 51 36.49	−17 120
42	8.9	28.0	30.3	32.5	34.7	36.7	c	40 32.44	303 14 10.0 9.9	III 44.620	0 39 57.43	17 46 52.79	18 120
43	7.8	29.8	32.1	34.1	36.5	38.5	c	41 34.20	303 48 10.0 11.4	III 47.250	0 40 59.20	17 11 59.91	17 134
44	9.0	53.6	55.7	57.9	0.0	2.2	(c)	41 57.88	303 14 10.0 10.5	V 49.440	0 41 22.86	17 45 21.53	18 124
45	8.9	33.1	35.2	37.3	39.5	41.8	c	44 37.38	304 4 10.0 10.8	III 46.780	0 44 2.36	16 56 8.79	17 141
46	8.9	29.4	31.6	33.8	36.0	38.1	c	45 33.78	304 18 10.0 11.1	III 45.110	0 44 58.76	16 42 40.08	16 139
47	9.1	34.6	36.9	39.0	41.1	43.3	c	46 38.98	304 18 " "	III 50.240	0 46 3.95	16 41 1.79	16 144
48	9.3	8.4	10.3	12.7	15.2	17.3	c	47 12.78	303 22 10.0 11.0	III 49.670	0 46 37.71	17 37 15.77	17 149
49	9.1	48.7	50.9	53.0	55.0	56.7	e	47 22.84	303 22 " "	V 50.300	0 46 47.77	17 37 5.05	17 150
50	8.6	42.7	45.0	47.1	49.3	51.5	c	49 47.12	304 2 10.0 10.7	III 45.130	0 49 12.06	−16 58 41.32	−17 157

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
51	8.0	45.6	47.7	49.9	52.0	54.4	c	50 49.92	303 30 10.0 10.5	III 45.890	0 50 14.82	−17 30 28.66	−17 159
52	8.4	23.0	25.2	27.5	29.8	31.8	c	51 27.46	303 10 10.0 11.0	III 44.300	0 50 52.34	17 51 0.09	18 152
53	9.2	29.0	31.0	33.3	35.4	37.6	c	52 33.26	303 24 10.0 10.6	III 44.900	0 51 58.14	17 36 48.19	17 166
54	9.4	46.5	48.6	53.2	54.7	57.2	c_4 d_3	52 44.37	303 40 10.0 10.4	VI 44.890	0 52 9.26	17 20 49.60	17 167
55	9.0	0.1	2.4	4.5	6.7	8.8	c	54 4.50	303 40 " "	V 45.900	0 53 29.38	17 20 29.81	17 170
56	9.5	0.3	2.5	4.6	6.8	8.9	c	55 4.62	304 14 10.0 10.6	V 45.720	0 54 29.52	16 46 31.54	17 172
57	8.5	40.7	42.8	45.0	47.1	49.3	c	55 44.98	303 50 10.0 11.0	V 45.040	0 55 9.86	17 10 45.72	17 173
58	8.9	35.8	37.8	39.8	41.9	43.5	e	56 9.75	303 22 10.0 10.5	VIIA(40).890	0 55 34.60	17 36 53.25	17 175
59	9.3	23.0	25.0	27.0	29.4	31.5	c	59 27.18	303 22 " "	III B 38.020	0 58 52.00	17 44 14.73	17 188
60	9.2	14.3	16.6	18.7	20.8	23.0	c	1 18.68	303 52 10.0 10.5	III 46.710	1 0 43.51	−17 8 13.34	−17 190
61	9.2	38.8	40.7	42.6	44.6	46.9	a	3 12.69	304 16 10.0 11.3	I 48.000	1 2 37.52	−16 43 45.71	−16 182
62	8.6	17.3	19.4	21.5	23.8	26.0	c	3 21.60	304 30 10.0 11.2	V 50.510	1 2 46.44	16 28 59.77	16 183
63	9.1	9.0	11.0	13.2	15.0	16.9	e	3 43.15	304 30 " "	VII C 47.900	1 3 7.98	16 36 16.91	16 185
64	9.5	33.3	35.7	37.5	39.3	41.4	e	5 7.59	304 30 " "	V B 43.850	1 4 32.42	16 34 21.36	16 188
65	9.0	16.1	18.4	20.4	22.9	24.9	c	6 20.54	303 20 10.0 10.6	III 42.680	1 5 45.30	17 41 33.17	17 206
66	8.2	27.6	29.8	32.0	34.1	36.2	c	7 31.94	304 26 10.0 11.4	III 42.830	1 6 56.74	16 35 26.59	16 195
67	9.4	16.0	18.2	20.2	22.5	24.7	c	8 20.32	303 52 10.0 10.5	III A 40.690	1 7 45.09	17 6 54.61	17 210
68	9.1	37.5	39.7	42.0	44.0	46.0	c	8 41.84	303 52 " "	III B 41.720	1 8 6.60	17 13 3.62	17 211
69	9.3	39.2	41.5	43.6	45.9	48.0	c	9 43.64	303 36 10.0 10.8	III 44.110	1 9 8.38	17 25 5.34	17 218
70	9.1	2.9	5.0	7.0	9.4	11.7	c	10 7.20	303 36 " "	III 48.525	1 9 31.94	−17 23 40.66	−17 221
71	8.6	29.8	31.6	36.0	37.6	40.4	c_4 d_3	10 27.39	303 12 10.0 10.6	VI A 43.310	1 9 52.11	−17 46 8.98	−18 199
72	8.2	24.4	26.7	28.8	30.9	33.2	c	11 28.80	303 12 " "	V C 46.580	1 10 53.50	17 54 47.03	18 204
73	8.2	36.9	39.2	41.3	43.5	45.7	c	12 41.32	303 24 10.0 11.1	III 45.010	1 12 6.03	17 36 49.04	17 229
74	9.0	15.2	17.3	19.6	21.7	24.0	c	13 19.56	304 2 10.0 10.7	III 47.270	1 12 44.30	16 58 3.98	17 231
75	9.3	41.2	43.3	45.5	47.6	49.8	c	15 45.48	303 42 10.0 10.2	III B 43.890	1 15 10.18	17 22 23.88	17 234
76	9.4	0.3	2.5	4.6	6.9	9.0	c	16 4.66	303 42 " "	V B 41.320	1 15 29.36	17 23 14.81	17 236
77	9.4	1.8	4.0	6.0	8.2	10.5	c	17 6.10	303 42 " "	III A 43.500	1 16 30.79	17 16 2.90	17 238
78	8.7	10.0	12.2	14.4	16.8	18.8	c	19 14.44	304 16 10.0 10.7	III 45.370	1 18 39.14	16 44 40.75	16 232
79	7.0	16.7	18.8	20.9	23.3	25.3	c	20 21.00	304 50 10.0 11.0	III 44.650	1 19 45.73	16 10 52.89	16 237
80	9.3	51.2	53.4	55.5	57.9	0.0	c	20 55.60	303 34 10.0 10.8	III 48.080	1 20 20.25	−17 25 51.24	−17 258
81	9.0	42.1	44.4	46.5	48.8	50.8	c	21 46.52	303 10 10.0 10.5	III 48.390	1 21 11.14	−17 49 46.90	−18 229
82	9.4	16.1	18.2	20.4	22.6	24.8	c	23 20.42	303 24 10.0 10.4	III 49.250	1 22 45.05	17 35 29.96	17 263
83	8.2	44.6	46.7	48.9	51.2	53.4	c	23 48.96	303 12 10.7 11.1	III 51.440	1 23 13.57	17 46 47.99	18 234
84	9.3	51.5	53.7	55.7	58.0	0.2	c	24 55.82	303 12 " "	III 57.000	1 24 20.43	17 45 1.48	17 269
85	9.2	9.2	11.5	15.7	17.3	20.0	c_4 d_3	25 7.05	303 12 " "	VI B 57.020	1 24 31.65	17 48 16.67	18 242
86	9.2	50.2	52.3	54.6	57.0	58.9	c	29 54.60	303 12 " "	III C 49.540	1 29 19.16	17 53 51.87	18 256
87	9.0	8.0	10.0	12.3	14.5	16.5	c	31 12.26	303 12 " "	III C 47.270	1 30 36.81	17 54 35.70	18 263
88	8.2	24.5	26.7	29.0	31.0	33.3	c	31 28.90	303 12 " "	V 45.220	1 30 53.45	17 48 50.21	18 265
89	9.0	34.3	36.5	38.8	41.0	43.0	c	32 38.72	303 12 " "	III 49.550	1 32 3.26	17 47 26.00	18 268
90	9.1	8.6	10.8	12.9	15.1	17.2	c	34 12.92	303 12 " "	III 50.280	1 33 37.45	−17 47 12.31	−18 274
91	9.1	59.8	2.2	4.4	6.5	8.6	c	35 4.30	303 12 " "	III A 45.180	1 34 28.83	−17 45 34.96	−17 297
92	9.1	10.3	12.4	14.5	16.9	18.9	c	36 14.60	303 12 " "	III 47.980	1 35 39.11	17 47 56.89	18 282
93	9.0	23.5	25.7	27.8	29.9	32.0	c	37 27.78	303 26 10.0 11.1	III A 45.750	1 36 52.30	17 31 24.11	17 303
94	8.6	41.2	43.5	45.5	47.7	49.9	c	37 45.56	303 26 " "	V C 46.540	1 37 10.07	17 40 51.82	17 304
95	9.2	53.3	55.6	57.8	0.0	2.3	c	38 57.80	303 40 10.0 10.7	III 48.530	1 38 22.32	17 19 45.92	17 306
96	8.6	18.8	20.8	23.2	25.3	27.5	c	40 23.12	303 40 " "	III 47.670	1 39 47.63	17 20 2.73	17 309
97	9.3	1.1	3.2	5.3	7.6	9.8	c	41 5.40	304 8 10.0 10.7	III C 46.260	1 40 29.93	16 58 54.67	17 310
98	9.4	8.5	10.8	12.9	15.0	17.2	c	42 12.88	304 8 " "	III A 49.430	1 41 37.41	16 48 12.46	17 315
99	8.3	20.5	22.6	24.7	27.0	29.2	c	43 24.80	303 18 10.0 10.5	III 44.620	1 42 49.27	17 43 3.22	17 319
100	9.0	28.3	30.5	32.6	34.8	36.9	c	44 32.62	303 36 10.0 10.0	III 47.035	1 43 57.10	−17 24 16.40	−17 322
101	9.2	58.4	0.5	2.7	4.9	7.1	c	45 2.72	303 50 10.0 10.7	III 49.220	1 44 27.21	−17 9 33.37	−17 324
102	9.2	34.5	36.6	38.9	40.9	43.0	c	45 38.78	303 50 " "	III (C) 48.760	1 45 3.26	17 16 8.65	17 327
103	8.9	29.7	31.9	34.0	36.3	38.3	c	46 34.04	303 10 10.0 11.0	III 46.725	1 45 58.48	17 50 23.71	18 317
104	8.6	13.4	15.6	17.7	19.9	22.0	c	47 17.72	303 34 10.0 10.9	III B 48.460	1 46 42.18	17 29 2.60	17 331
105	6.5	34.8	37.0	39.1	41.5	43.5	c	48 39.18	303 34 " "	III 50.220	1 48 3.63	17 25 15.83	17 336
106	9.2	49.3	51.5	53.6	55.8	57.9	c	49 53.62	303 34 " "	III C 49.240	1 49 18.06	17 32 1.15	17 342
107	9.0	4.6	6.5	8.4	10.4	12.7	a	51 38.63	303 22 10.0 10.6	I 49.780	1 51 3.05	17 37 24.21	17 348
108	8.8	37.5	39.5	41.7	43.9	46.1	c	51 41.74	303 22 " "	III B 46.130	1 51 6.15	17 41 49.12	17 349
109	7.8	58.4	0.5	2.7	4.8	7.0	c	53 2.68	304 6 10.0 10.9	III 45.640	1 52 27.14	16 54 43.02	17 357
110	9.1	30.8	33.0	35.0	37.4	39.3	c	57 35.10	303 34 10.0 10.0	III 48.840	1 56 59.49	−17 25 44.83	−17 370
111	8.2	9.8	11.9	14.0	16.4	18.5	c	59 14.12	303 34 " "	III B 42.910	1 58 38.50	−17 30 52.34	−17 381
112	8.0	31.7	34.0	36.2	38.4	40.4	c	0 36.14	303 12 10.0 10.6	III A 44.290	2 0 0.49	17 45 58.39	17 384
113	9.2	9.4	11.6	13.7	16.1	18.3	c	1 13.82	303 12 " "	III C 46.630	2 0 38.16	17 54 55.30	18 361
114	8.5	38.8	40.9	43.2	45.4	47.6	c	1 43.18	303 12 " "	III 50.100	2 1 7.52	17 47 22.57	18 362
115	8.6	43.0	45.3	47.4	49.8	51.8	c	3 47.46	303 42 10.0 9.6	III 46.680	2 3 11.82	17 18 27.55	17 394
116	.....	15.5	17.5	19.9	22.0	24.2	c	4 19.82	303 6 10.0 10.1	V B 47.880	2 3 44.13	17 57 21.24	18 371
117	8.0	37.9	39.7	44.1	45.6	48.3	c_4 d_3	4 35.43	303 6 " "	VI A 44.660	2 3 59.75	17 51 55.04	18 372
118	8.0	17.3	19.4	21.6	23.8	26.0	c	5 21.62	303 34 10.0 10.4	V 47.540	2 4 45.96	17 26 12.81	17 402
119	8.5	1.8	4.0	6.1	8.4	10.5	c	6 6.16	303 20 10.0 10.4	V 47.860	2 5 30.48	17 40 7.63	17 404
120	9.0	56.6	58.9	1.0	3.4	5.5	c	7 1.08	303 38 10.0 10.8	III 46.690	2 6 25.41	−17 22 27.79	−17 407
121	9.4	45.9	48.2	50.0	51.8	54.2	a	10 20.18	303 6 10.0 9.9	I 46.670	2 9 44.45	−17 54 29.69	−18 387^1
122	9.4	17.7	20.0	22.3	24.3	26.5	c	10 22.16	303 6 " "	III 47.690	2 9 46.43	17 54 11.67	18 387^2
123	8.3	47.7	49.8	51.9	54.2	56.3	c	11 51.98	303 56 10.0 10.3	III 46.000	2 11 16.30	−17 4 41.50	−17 433

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
124	9.2	35.6	37.7	39.8	42.2	44.4	c	13 39.94	303 48 10.0 11.0	III (C)	45.080	2 13 4.23	−17 19 25.95	−17 441,
125	8.2	46.9	49.3	51.5	53.6	55.7	c	13 51.40	303 48 “ “	V B	46.575	2 13 15.70	17 15 45.93	17 442
126	8.7	48.4	50.6	52.6	54.9	57.0	c	14 52.70	303 48 “ “	III A	42.410	2 14 17.00	17 10 35.87	17 443
127	8.9	22.7	24.7	26.8	29.2	31.4	c	17 26.96	304 8 10.0 10.9	III A	41.520	2 16 51.27	16 50 52.57	17 453
128	7.5	5.2	7.4	9.6	11.8	13.9	c	18 9.58	304 8 “ “	III B	40.230	2 17 33.88	16 57 46.24	17 457
129	8.9	2.1	4.3	6.4	8.7	10.9	c	19 6.48	304 8 “ “	III	45.080	2 18 30.78	16 53 0.08	17 463
130	8.5	14.2	16.4	18.8	20.9	23.0	c	20 18.66	303 6 10.0 10.9	III	47.700	2 19 42.88	−17 54 13.55	−18 416
131	9.0	38.1	40.3	42.4	44.7	47.0	c	21 42.50	303 50 10.0 9.8	III	50.570	2 21 6.76	−17 9 16.94	−17 468
132	8.6	17.3	19.5	21.6	23.9	25.9	c	22 21.64	303 50 “ “	V	44.720	2 21 45.90	17 11 10.71	17 470
133	8.5	6.7	8.9	11.0	13.3	15.3	c	25 11.04	303 18 10.0 10.5	III	47.840	2 24 35.25	17 42 11.67	17 477
134	8.3	54.8	57.0	59.2	1.4	3.7	c	25 59.22	303 40 10.0 10.8	III B	41.720	2 25 23.44	17 25 21.30	17 480
135	9.4	12.0	14.1	16.3	18.6	20.7	c	27 16.34	303 40 “ “	III B	41.100	2 26 40.56	17 25 33.53	17 484
136	8.9	25.2	27.2	29.6	31.8	34.0	c	28 29.56	303 40 “ “	III A	44.970	2 27 53.78	17 17 50.88	17 490
137	8.0	54.2	56.2	58.4	0.6	2.8	c	30 58.44	303 24 10.0 10.9	III C	44.770	2 30 22.61	17 43 37.88	17 498
138	8.2	55.7	57.8	0.1	2.3	4.4	c	32 0.06	303 24 “ “	III A	41.940	2 31 24.24	17 34 50.83	17 502
139	9.0	16.4	18.5	20.7	23.0	25.1	c	32 20.74	303 24 “ “	III A	45.740	2 31 44.92	17 33 38.00	17 503
140	8.7	53.8	55.8	58.0	0.4	2.6	c	33 58.12	303 24 “ “	III	50.610	2 33 22.29	−17 35 20.38	−17 507
141	9.1	29.2	31.3	33.5	35.7	38.0	c	36 33.54	303 12 10.0 9.8	III	48.530	2 35 57.68	−17 48 2.26	−17 516
142	8.7	17.8	20.0	22.3	24.5	26.6	c	37 22.24	303 46 10.0 10.4	III A	42.520	2 36 46.43	17 12 40.23	17 519
143	9.0	56.6	58.6	0.8	3.0	5.3	c	39 0.86	303 46 “ “	III C	44.710	2 38 25.03	17 21 40.31	17 524
144	8.8	48.6	50.5	52.4	54.5	56.6	a	43 22.69	303 2 10.0 10.3	I	47.630	2 42 46.79	17 58 20.41	18 474
145	8.9	20.0	22.2	24.4	26.6	28.8	c	43 24.40	303 14 10.0 10.0	III	44.710	2 42 48.51	17 47 17.34	17 536
146	8.3	13.6	15.8	17.9	20.0	22.3	c	45 17.92	303 24 10.0 10.4	III A	45.150	2 44 42.04	17 33 53.27	17 543
147	8.0	34.8	37.0	39.2	41.5	43.6	c	45 39.22	303 24 “ “	V C	51.185	2 45 3.33	17 41 40.37	17 547
148	8.2	42.2	44.3	46.5	48.8	50.9	c	47 46.54	303 24 “ “	III B	47.160	2 47 10.65	17 39 44.14	17 554
149	8.0	38.5	40.8	42.9	45.1	47.2	c	48 42.90	304 0 10.0 10.5	III	43.260	2 48 7.05	17 1 43.92	17 557
150	9.4	57.3	59.5	1.8	4.0	6.0	c	49 1.72	304 0 “ “	V B	44.070	2 48 25.87	−17 4 43.32	−17 558
151	8.8	24.4	26.7	28.8	30.9	33.2	c	50 28.80	303 50 10.0 10.7	III	42.830	2 49 52.93	−17 11 53.15	−17 563
152	8.4	49.8	52.0	54.2	56.4	58.6	c	51 54.20	303 38 10.0 10.6	III	46.600	2 51 18.31	17 22 41.94	17 56
153	8.9	1.8	4.2	6.3	8.4	10.6	c	53 6.26	304 0 10.0 10.7	III	44.440	2 52 30.40	17 1 22.50	17 571
154	9.3	49.0	51.4	53.4	55.8	57.8	c	53 53.48	303 24 10.0 11.0	III	48.840	2 53 17.57	17 36 1.12	17 576
155	9.3	52.5	54.7	56.8	59.0	1.2	c	54 56.84	303 16 10.0 10.5	III	50.920	2 54 20.91	17 43 21.23	17 57
156	9.2	22.3	24.6	26.8	29.0	30.9	c	55 26.72	303 16 “ “	V B	44.280	2 54 50.78	17 48 43.67	17 579
157	7.8	14.0	16.3	18.5	20.6	22.8	c	57 18.44	303 24 10.0 10.7	III	43.680	2 56 42.51	17 37 40.32	17 587
158	8.0	8.2	10.4	12.5	14.9	17.1	c	58 12.62	303 8 10.0 10.3	III	48.780	2 57 36.67	17 52 3.85	18 517
159	9.0	46.7	48.9	51.0	53.2	55.3	c	0 51.02	303 8 “ “	III B	43.040	3 0 15.05	17 57 8.15	18 53
160	9.1	38.9	41.1	43.2	45.4	47.7	c	1 43.26	303 46 10.0 10.9	III A	39.780	3 1 7.35	−17 13 39.78	−17 59
161	8.0	32.8	35.0	37.0	39.2	41.4	c	2 37.08	303 16 10.0 10.5	V C	45.230	3 2 1.11	−17 51 40.17	−18 53
162	9.0	48.7	50.8	52.9	55.2	57.3	c	3 52.98	303 16 “ “	III	49.490	3 3 17.02	17 43 51.41	17 60
163	9.0	45.7	48.0	50.2	52.5	54.7	c	6 50.22	303 34 10.0 10.8	III B	40.430	3 6 14.27	17 31 58.35	17 61
164	8.8	5.4	7.4	9.7	12.2	14.3	c	7 9.80	303 34 “ “	V	47.240	3 6 33.86	17 26 35.80	17 61
165	8.6	30.8	33.0	35.0	37.3	39.6	c	8 35.14	303 52 10.0 10.9	III	45.260	3 7 59.22	17 9 11.82	17 616
166	8.5	34.9	37.0	39.3	41.5	43.7	c	9 39.28	303 36 10.0 10.3	III	47.500	3 9 3.33	17 24 30.36	17 62
167	9.4	57.3	59.5	1.6	3.9	6.0	c	10 1.66	303 36 “ “	V B	45.910	3 9 25.70	17 28 15.86	17 626
168	8.0	40.6	42.8	44.9	47.2	49.4	c	11 44.98	303 50 10.0 11.0	III	43.180	3 11 9.04	17 11 52.82	17 63
169	9.2	2.3	4.5	6.7	8.9	11.3	c	14 6.74	303 2 10.0 10.0	III	42.920	3 13 30.73	18 0 1.81	18 58
170	8.2	18.6	20.8	23.0	25.1	27.2	c	15 22.94	303 12 10.0 11.0	III A	41.450	3 14 46.94	−17 47 13.92	−17 64
171	8.6	52.4	54.5	56.7	58.9	1.0	c	15 56.70	303 12 “ “	III C	46.330	3 15 20.69	−17 55 22.11	−18 58
172	8.0	40.3	42.4	44.6	46.9	49.0	c	16 44.64	303 12 “ “	III B	43.980	3 16 8.63	17 52 54.53	18 59
173	9.0	48.2	50.3	52.6	54.6	56.8	c	17 52.50	304 16 10.0 10.5	III	47.680	3 17 16.59	16 44 27.21	16 62
174	8.8	46.7	48.8	51.1	53.2	55.3	c	18 51.02	303 48 10.0 11.1	III	49.940	3 18 15.07	17 11 45.39	17 65
175	6.8	14.3	16.5	18.7	20.8	22.0	c	19 18.66	303 20 10.0 10.4	V C	(45).175	3 18 42.65	17 47 46.36	17 65
176	9.2	58.1	0.3	2.4	4.5	6.9	c	20 2.44	303 20 “ “	III A	42.380	3 19 26.44	17 38 57.41	17 65
177	9.1	6.0	8.0	9.9	11.7	14.0	a	22 40.04	303 20 “ “	I A	43.940	3 22 4.04	17 38 26.59	17 66
178	8.7	59.8	1.9	4.0	6.4	8.5	c	27 4.12	303 30 10.0 10.6	III	47.630	3 26 28.12	17 30 33.68	17 68
179	9.2	31.5	33.5	35.8	38.0	40.2	c	27 35.80	303 30 “ “	III	46.940	3 26 59.80	17 30 47.11	17 68
180	9.1	47.4	49.7	51.8	54.0	56.0	c	28 51.78	303 50 10.0 10.6	III A	45.230	3 28 15.81	−17 8 3.79	−17 68
181	9.1	29.0	31.2	33.3	35.5	37.6	c	29 33.32	303 50 “ “	III C	47.770	3 28 57.34	−17 16 56.92	−17 69
182	9.0	56.9	59.0	1.2	3.5	5.7	c	34 1.26	303 2 10.0 10.0	III	45.570	3 33 25.20	17 59 17.44	18 64
183	7.5	35.5	37.6	39.7	41.9	44.0	c	35 39.74	303 20 10.0 10.2	III	45.360	3 35 3.71	−17 41 20.87	−17 70

Reduction Elements. Zone 147.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 21.4....	−0.055	+0.079	−0.358	−0.058	+0.073	−0.336
21.6....	−0.061	+0.067	−0.315			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ω^2 Aquarii		Mayer 986		2 Ceti		7 Ceti		Lalande 6476		20 Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	305 54 10.40		310 28 9.95		303 6 10.40		301 32 10.15		308 0 10.60		303 14 10.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	46.970	6 16.00	46.240	6 1.29	48.450	6 43.98	43.610	5 9.52	44.930	5 36.96	43.570	5 10.85
II Red. to Mer.	47.040	0.15	.270	0.10	.480	0.18	.640	0.19	45.000	0.13	.630	0.18
VI Inclination	.170		.370		.635			1.68	.150		.780	
VII Refraction	.190	1 21.3	.420	1 9.1	.640	1 30.3		1 36.0	.145	1 15.9	.795	1 30.5

	δ Eridani		Lalande 7685	
	° ′ ″		° ′ ″	
CIRCLE READING.	310 54 10.30		302 42 10.40	
	r	′ ″	r	′ ″
I Microm. Eq.	47.890	6 33.69	46.370	6 4.19
II Red. to Mer.	.960	0.10	.420	0.18
VI Inclination	48.090		.565	
VII Refraction	.120	1 8.5	.550	1 32.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Cephei	23 35 50.98	8	+0.92	[−45.47]	38 6	....
ω^2 Aquarii	23 38 6.46	11	−0.30	−45.51	305 59 5.3	16.1
Mayer 986	23 45 39.43	11	−0.27	−45.60	310 33 2.2	16.8
2 Ceti	23 59 11.63	11	−0.32	−45.57	303 11 24.3	16.6
7 Ceti	0 10 8.46	11	−0.32	−45.58	301 35 45.5	16.6
Lalande 6476	3 25 28.16	11	−0.29	−45.62	308 4 31.8	17.1
20 Eridani	3 32 20.04	11	−0.31	−45.58	303 17 50.8	17.7
δ Eridani	3 39 2.70	11	−0.27	−45.57	310 59 35.6	17.1
Lalande 7685	4 2 44.09	11	−0.32	−45.56	302 46 42.5	16.7
Groombridge 750	4 4 47.46	7	+2.86	[−45.78]	46 20	....

h 23.890 .... *dt* .... s −45.565
Hourly rate .... − 0.0045

Adopted Equator Point .... 321° 6′ 16.″84

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
23 30	29.912	43.7	41.3
0 30	29.906	42.9	40.2
1 28	29.900	42.2	39.2
2 29	29.896	41.0	38.3
3 30	29.890	40.2	37.5
4 10	29.900	40.8	37.7

Notes.

83. Double, following observed.

90. Images tolerably steady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			$D =$ Z. D. N. to 1895.0			R		
			303°	304°	305°	303°	304°	305°	303°	304°	305°
°	s	h m	s	s	s	″	″	″	″	″	″
303	−0.315	23 30	+11.600	+11.604	+11.607	−19.76	−19.99	−20.23	90.91	87.56	84.35
304	0.309	0 0	11.266	11.284	11.301	21.71	21.91	22.11	91.01	87.66	84.45
305	−0.302	0 30	10.954	10.985	11.018	23.39	23.56	23.72	91.12	87.76	84.55
		1 0	10.671	10.717	10.761	24.81	24.94	25.06	91.20	87.84	84.63
		1 30	10.421	10.479	10.536	25.91	25.99	26.07	91.28	87.92	84.70
		2 0	10.209	10.277	10.347	26.68	26.72	26.76	91.39	88.02	84.80
		2 30	10.038	10.119	10.198	27.10	27.10	27.10	91.47	88.10	84.88
		3 0	9.910	9.998	10.087	27.18	27.15	27.10	91.54	88.17	84.94
		3 30	9.827	9.925	10.022	26.91	26.83	26.75	91.58	88.21	84.98
		4 0	+ 9.794	+ 9.897	+ 9.998	−26.30	−26.18	−26.06	91.58	88.21	84.98

1895 OCTOBER 23. ZONE 148. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°	
1	8.4	12.0	14.0	16.0	17.7	19.9	a	3 45.69	305 36 10.0	9.6	I	(50).280	0 3 9.97	−15 22 51.76	−15	7
2	8.8	16.0	18.0	19.9	21.8	24.1	a	4 49.69	305 54 10.0	10.0	I B	50.065	0 4 13.97	15 8 8.00	15	11
3	8.9	30.1	32.0	34.0	35.9	38.1	a	5 3.74	305 54 "	"	III	52.920	0 4 28.02	15 4 1.69	15	12
4	9.3	12.9	14.5	18.7	20.8	23.0	b_2 c_3	5 22.99	305 54 "	"	III B	45.610	0 4 47.26	15 9 35.26	15	14
5	9.1	41.2	43.4	45.5	47.6	49.8	c	5 45.50	305 54 "	"	III C	44.045	0 5 9.76	15 13 18.23	15	17
6	8.6	57.5	59.6	3.9	5.4	8.0	c_4 d_3	5 55.30	305 54 "	"	VI A	53.990	0 5 19.57	15 0 28.02	15	18
7	9.1	21.0	23.2	25.3	27.2	29.0	e	6 55.71	307 22 10.0	9.6	V A	45.230	0 6 20.00	13 35 11.83	13	18
8	9.1	8.3	10.5	12.2	14.3	16.6	a	8 42.51	303 16 10.0	9.8	III	48.930	0 8 6.68	17 43 26.33	17	16
9	8.2	39.5	42.0	44.0	46.2	48.4	c	8 44.02	303 16 "	"	V	45.735	0 8 8.19	17 44 29.00	17	17
10	9.2	24.3	26.3	28.3	30.1	32.6	a	9 58.46	303 16 "	"	III B	44.700	0 9 22.61	−17 48 0.93	−18	27

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
11	9.2	4.0	6.0	10.4	12.5	14.6	$b_2 c_3$	10 14.66	303 16 10.0 9.8	III A 44.375	0 9 38.81	−17 42 36.08	−17 22
12	9.1	32.2	34.4	36.6	38.9	40.9	c	10 36.60	303 16 " "	V B 42.110	0 10 0.74	17 48 52.25	18 30
13	9.0	......	3.9	6.0	7.8	9.7	■	10 35.94	304 14 10.0 9.7	VII 44.480	0 10 0.12	16 46 51.49	17 23
14	9.1	11.8	14.0	16.0	17.8	19.7	e	11 46.37	307 2 10.0 9.6	VII B 42.420	0 11 10.61	14 2 37.02	14 33
15	7.8	29.9	32.1	34.1	36.0	37.9	e	12 4.52	307 2 " "	VII 48.175	0 11 28.76	13 57 32.95	14 35
16	7.8	22.5	24.6	26.7	28.8	30.9	c	13 26.70	307 2 " "	III B 48.310	0 12 50.93	14 0 41.21	14 42
17	9.4	19.8	21.9	24.0	26.2	28.4	c	15 24.06	304 52 10.0 10.4	III C 47.330	0 14 48.20	16 14 18.68	16 48
18	9.0	45.9	47.9	50.2	52.4	54.6	c	15 50.20	304 52 " "	III 49.750	0 15 14.34	16 7 6.08	16 49
19	8.9	12.9	15.0	17.1	19.3	21.5	c	16 17.16	304 52 " "	III C 51.010	0 15 41.29	16 13 8.13	16 51
20	9.1	56.5	58.5	0.5	2.3	4.6	a	18 30.40	304 34 10.0 9.1	I 49.400	0 17 54.50	−16 25 13.03	−16 57
21	7.0	31.4	33.6	35.8	38.0	40.2	c	18 35.80	304 34 " "	III B 44.950	0 17 59.89	−16 29 53.27	−16 58
22	8.6	9.8	11.9	13.9	15.8	17.7	e	18 44.37	307 18 10.0 9.7	V 42.480	0 18 8.55	13 43 20.88	13 63
23	9.0	6.2	8.2	10.4	12.7	14.8	c	20 10.46	304 44 10.0 9.9	III 42.270	0 19 34.54	16 17 30.66	16 61
24	9.2	5.9	8.0	10.2	12.4	14.5	c	21 10.20	304 44 " "	III B 42.450	0 20 34.27	16 20 40.61	16 67
25	9.0	34.2	36.3	38.4	40.7	42.8	c	21 38.48	304 44 " "	III 48.480	0 21 2.55	16 15 31.61	16 68
26	8.0	38.0	40.0	41.8	43.8	46.2	a	23 11.96	304 2 10.0 9.9	I 47.520	0 22 36.00	16 57 50.76	17 61
27	9.3	17.0	19.0	21.3	23.5	25.8	c	23 21.32	303 50 10.0 9.7	III 46.490	0 22 45.33	17 30 13.81	17 62
28	9.2	5.6	7.8	10.0	12.2	14.3	c	24 9.98	304 14 10.0 10.0	III 45.900	0 23 34.01	16 46 22.83	17 63
29	8.5	54.5	56.8	58.9	1.0	3.1	c	25 58.86	304 32 10.0 9.5	III 46.640	0 25 22.88	16 28 8.18	16 81
30	8.6	12.7	14.8	16.9	19.0	21.2	c	28 16.92	306 58 10.0 9.4	III 45.600	0 27 41.01	−14 2 21.61	−14 83
31	9.4	37.7	39.8	41.9	44.2	46.3	c	29 41.98	304 36 10.0 9.7	III 44.530	0 29 5.97	−16 24 48.78	−16 95
32	8.0	51.8	53.9	55.8	57.7	59.9	a	31 25.85	303 52 10.0 9.1	I A 39.540	0 30 49.80	17 7 10.16	17 85
33	9.1	16.8	18.5	22.6	24.7	26.9	$b_2 c_3$	31 26.97	303 52 " "	III B 41.000	0 30 50.92	17 13 12.52	17 86
34	9.1	36.4	38.5	40.7	43.0	45.0	c	31 40.72	303 52 " "	V B 46.080	0 31 4.66	17 11 36.58	17 87
35	8.0	42.2	44.3	46.7	48.7	50.8	c	33 46.48	304 12 9.5 8.8	III 48.170	0 33 10.42	16 47 41.26	17 98
36	8.0	33.7	35.8	37.9	40.0	42.1	c	35 37.90	306 30 10.0 10.2	III A 49.060	0 35 1.92	14 26 1.50	14 110
37	9.1	57.0	59.2	1.4	3.5	5.7	c	36 1.36	306 30 " "	III C 46.470	0 35 25.36	14 36 32.77	14 113
38	9.3	12.5	14.8	16.9	19.0	21.1	c	37 16.86	304 4 10.0 9.7	III 48.740	0 36 40.76	16 55 30.46	17 113
39	7.8	13.6	15.7	17.8	20.2	22.1	c	41 17.88	304 2 10.0 9.0	III 46.400	0 40 41.74	16 58 16.33	17 132
40	8.9	21.9	24.1	26.2	28.6	30.6	c	42 26.28	304 28 10.0 9.4	III 47.230	0 41 50.15	−16 31 59.02	−16 130
41	8.0	49.0	51.0	53.1	55.4	57.5	c	45 53.20	304 34 10.0 9.7	III 49.070	0 45 17.04	−16 25 23.74	−16 142
42	9.1	36.1	38.2	40.4	42.5	44.7	c	47 40.38	305 36 10.0 9.2	V 47.510	0 47 4.26	15 23 52.48	15 158
43	7.8	40.2	42.2	44.4	46.7	48.8	c	49 44.46	304 18 10.0 10.3	III 43.985	0 49 8.26	16 43 2.36	16 152
44	8.8	23.7	26.0	28.0	30.2	32.3	c	51 28.04	304 6 9.5 8.7	III 45.530	0 50 51.80	16 54 34.63	17 163
45	8.0	21.0	23.2	24.9	26.7	29.2	a	52 54.94	304 28 10.0 9.4	I 44.390	0 52 18.70	16 32 53.45	16 159
46	7.7	17.8	19.9	21.9	24.2	26.3	c	53 22.02	304 46 10.0 9.9	III C 49.730	0 52 45.79	16 19 37.62	16 161
47	8.2	42.8	44.9	47.2	49.5	51.5	c	53 47.18	304 46 " "	III 48.755	0 53 10.95	16 13 30.19	16 162^1
48	8.2	13.3	15.5	17.5	19.5	21.3	e	53 47.63	304 46 " "	V 49.160	0 53 11.40	16 13 23.76	16 162^2
49	9.1	51.5	53.8	55.9	57.8	59.6	e	54 26.07	305 46 10.0 9.5	VII 49.230	0 53 49.89	15 13 20.97	15 178
50	9.1	9.7	12.0	14.0	16.3	18.4	c	56 14.08	303 22 10.0 9.3	V 48.750	0 55 37.76	−17 37 36.62	−17 176
51	9.2	8.5	10.5	12.7	15.0	17.0	c	59 12.74	303 54 10.0 9.0	III 44.450	0 58 36.43	−17 6 56.74	−17 187
52	9.0	47.8	49.8	51.5	53.5	56.0	a	3 21.73	304 0 10.0 9.1	I 43.490	I 2 45.38	17 1 13.92	17 195
53	8.6	44.7	46.9	49.0	51.2	53.4	c	3 49.04	307 14 10.0 9.0	III 42.765	I 3 12.85	13 47 20.19	14 219
54	8.0	15.3	17.4	19.7	21.8	24.0	c	4 19.64	303 24 10.0 10.1	V 48.040	I 3 43.25	17 35 51.02	17 198
55	7.8	59.7	1.8	3.9	6.2	8.5	c	6 4.02	304 10 10.0 9.5	III 46.340	I 5 27.66	16 50 20.46	17 201
56	9.2	26.0	28.2	30.3	32.3	34.5	c	7 30.26	306 50 10.0 10.0	III B 46.065	I 6 54.03	14 13 31.27	14 227
57	9.0	39.2	41.5	43.7	45.8	47.9	c	7 43.62	306 50 " "	V 48.800	I 7 7.39	14 9 26.88	14 228
58	9.0	50.2	52.2	54.0	55.8	58.2	a	9 23.96	304 50 10.0 9.5	I 48.160	I 8 47.60	16 9 42.50	16 199
59	6.5	35.6	37.7	39.8	42.0	44.1	c	9 39.84	307 0 10.0 9.4	III 45.850	I 9 3.60	14 0 22.33	14 235
60	9.3	13.0	15.3	17.2	19.0	21.0	e	9 47.19	304 2 10.0 8.9	V 50.165	I 9 10.79	−16 57 9.72	−17 219
61	9.0	7.8	9.8	12.0	14.2	16.2	c	12 12.00	303 50 10.0 9.1	III 50.560	I 11 35.56	−17 9 1.72	−17 226
62	8.9	21.7	23.7	25.9	28.3	30.3	c	12 25.98	303 50 " "	V B 44.500	I 11 49.54	17 14 12.92	17 227
63	9.4	15.8	17.9	20.0	22.2	24.4	c	13 20.06	304 40 10.0 9.5	III 47.190	I 12 43.66	16 20 3.84	16 215
64	8.3	28.3	30.4	32.5	34.9	37.0	c	15 32.62	303 26 10.0 9.9	III 48.370	I 14 56.13	17 33 45.21	17 232
65	7.5	16.2	18.5	20.6	22.8	24.9	c	16 20.60	306 36 10.0 9.9	III 44.350	I 15 44.30	14 24 53.07	14 258
66	8.8	8.6	10.7	12.8	15.0	17.1	c	19 12.84	306 6 10.0 9.5	III 47.370	I 18 36.48	14 53 57.21	15 255
67	8.8	53.7	55.9	58.0	0.1	2.3	c	20 58.00	306 50 10.0 9.1	III 45.090	I 20 21.68	14 10 39.44	14 274
68	9.0	5.0	7.1	9.4	11.7	13.9	c	22 9.42	303 58 10.0 9.5	III 44.770	I 21 32.92	17 2 53.99	17 261
69	9.1	43.5	45.6	47.7	50.0	52.0	c	23 47.76	304 20 10.0 10.0	III B 47.890	I 23 11.25	16 43 6.33	16 245
70	8.2	39.5	41.7	43.6	45.4	47.7	a	25 13.53	304 20 " "	I 50.180	I 24 37.02	−16 39 7.83	−16 250
71	9.1	4.6	6.8	8.9	11.2	13.2	c	25 8.94	305 20 10.0 10.0	V 45.185	I 24 32.49	−15 40 43.54	−15 273
72	8.0	13.7	15.7	18.0	20.2	22.4	c	27 18.00	303 42 10.0 9.4	III 50.270	I 26 41.43	17 17 10.33	17 274
73	9.3	49.6	51.7	53.9	56.1	58.4	c	27 53.94	303 42 " "	III B 43.850	I 27 17.36	17 22 26.97	17 277
74	8.0	17.8	19.8	22.2	24.3	26.3	c	28 22.08	304 20 10.0 9.7	V 48.335	I 27 45.54	16 39 46.87	16 260
75	9.3	55.5	57.6	59.4	1.3	3.6	a	30 29.26	305 34 10.0 9.4	I 43.830	I 29 52.78	15 27 7.32	15 282
76	8.6	44.2	46.4	48.5	50.7	52.9	c	30 48.54	306 4 10.0 9.3	III 50.410	I 30 12.09	14 55 1.26	15 283
77	9.1	8.6	10.8	12.9	15.0	17.4	c	31 12.94	303 42 10.0 9.4	V 46.950	I 30 36.33	17 18 16.17	17 284
78	8.1	27.9	30.0	32.0	34.3	36.4	c	32 32.12	306 6 10.0 9.0	III 48.240	I 31 55.66	14 53 43.29	15 289
79	9.2	52.7	55.0	57.2	59.3	1.5	c	32 57.14	304 14 10.0 9.6	V 45.980	I 32 20.56	16 46 33.34	17 292
80	8.0	6.9	9.1	11.4	13.5	15.7	c	34 11.32	305 2 10.0 9.4	III 46.725	I 33 34.78	−15 58 15.60	−16 280
81	8.3	27.4	29.6	31.5	33.2	35.7	a	36 1.57	303 32 10.0 9.4	I 42.310	I 35 24.92	−17 29 43.83	−17 300
82	8.1	16.6	18.7	20.8	23.0	25.1	c	36 20.84	304 14 10.0 9.7	III 42.210	I 35 44.23	16 47 45.00	17 301
83	9.0	3.0	5.0	7.1	9.2	11.5	c	39 7.16	306 48 10.0 9.8	III 46.810	I 38 30.71	−14 12 9.69	−14 323

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°	
84	9.1	14.6	16.8	18.9	21.1	23.2	c	41 18.92	305	20	10.0	9.7	III	44.890	1 40 42.36	−15 40 51.25	−15	309
85	7.8	6.8	9.0	11.0	13.3	15.4	c	42 11.10	307	0	10.0	9.9	III	46.950	1 41 34.64	14 0 7.05	14	333
86	8.9	7.5	9.5	11.3	13.1	15.6	a	43 41.14	305	48	9.4	9.2	I A	42.650	1 43 4.59	15 10 16.86	15	318
87	7.7	48.3	50.3	52.2	54.0	56.4	a	44 21.99	305	48	"	"	I B	45.720	1 43 45.43	15 15 46.73	15	321
88	9.4	18.1	20.4	22.4	24.8	26.9	c	44 22.52	305	48	"	"	III C	43.830	1 43 45.96	15 19 37.64	15	322
89	9.4	17.0	19.0	21.0	23.4	25.5	c	45 21.18	305	24	10.0	9.0	III A	39.390	1 44 44.59	15 35 22.43	15	324
90	9.0	33.0	35.0	37.0	38.8	41.0	a	47 6.52	307	4	10.0	9.5	I	46.660	1 46 30.04	−13 56 12.17	−14	342
91	8.7	11.7	13.8	15.9	18.1	20.3	c	47 15.96	303	46	10.0	10.0	III	47.940	1 46 39.25	−17 13 58.67	−17	330
92	8.8	50.1	52.4	54.5	56.3	58.1	e	47 24.57	305	22	10.0	9.9	V	45.150	1 46 47.97	15 38 48.70	15	328
93	.....	52.1	54.2	56.3	58.7	0.7	c	48 56.40	303	46	10.0	10.2	V	49.645	1 48 19.68	17 13 27.56	17	340
94	9.2	23.6	26.0	27.9	30.0	31.7	e	48 57.77	303	8	10.0	8.6	VII	(45).425	1 48 20.99	17 52 52.54	18	322
95	9.1	9.8	12.0	13.8	15.7	17.6	e	49 44.20	306	18	10.0	9.9	VII	47.570	1 49 7.64	14 42 1.22	14	354
96	.....	22.0	24.3	26.4	28.3	30.0	e	50 56.47	305	10	8.5	9.6	VII	49.500	1 50 19.84	15 49 28.65	16	331
97	.....	51.3	53.4	57.7	59.3	1.9	$c_4\ d_3$	51 49.05	303	38	10.0	9.4	VI C	52.820	1 51 12.29	17 26 54.64	17	351
98	8.1	46.0	48.1	50.2	52.4	54.5	c	55 50.24	306	58	10.0	9.6	III	47.990	1 55 13.70	14 1 50.32	14	373
99	9.2	17.5	19.5	21.6	23.9	26.0	c	58 21.70	305	0	10.0	9.3	III B	39.950	1 57 44.98	16 5 44.33	16	355
100	9.0	17.3	19.6	21.6	24.0	26.2	c	59 21.74	305	0	"	"	III A	44.790	1 58 45.03	−15 57 42.99	−16	358
101	9.1	21.2	23.2	25.3	27.6	29.7	c	3 25.40	304	10	10.0	9.1	III A	46.535	2 2 48.61	−16 47 13.15	−17	391
102	9.1	56.6	58.8	1.0	3.0	5.3	c	4 0.94	304	10	"	"	III C	49.690	2 3 24.13	16 55 54.37	17	396
103	6.5	33.7	35.8	38.0	40.3	42.4	c	4 38.04	302	46	10.0	9.0	V	44.720	2 4 1.12	18 15 9.69	18	374
104	9.0	19.9	22.2	24.1	26.1	28.0	e	4 54.12	303	52	10.0	9.5	VII	50.280	2 4 17.29	17 7 20.31	17	399
105	9.0	4.7	6.9	9.0	11.2	13.4	c	6 9.04	303	52	"	"	III B	47.400	2 5 32.20	17 11 26.70	17	405
106	8.2	52.6	54.6	56.9	59.1	1.3	c	9 56.90	303	40	10.0	9.9	III	43.550	2 9 20.02	17 21 28.71	17	422
107	8.9	36.2	38.3	40.5	42.7	45.0	c	11 40.54	304	38	10.0	9.2	III A	40.160	2 11 3.73	16 21 16.06	16	409
108	9.0	43.2	45.3	47.4	49.7	51.8	c	12 47.48	304	38	"	"	III	41.700	2 12 10.66	16 24 2.21	16	416
109	8.0	46.6	48.8	51.0	53.2	55.4	c	13 51.00	304	38	"	"	III	46.780	2 13 14.17	16 22 24.97	16	421
110	9.1	1.9	4.0	6.2	8.5	10.7	c	17 6.26	303	32	10.0	9.1	III C	48.920	2 16 29.32	−17 34 15.53	−17	452
111	9.0	31.6	33.7	36.1	38.3	40.4	c	17 36.02	303	32	"	"	III A	46.960	2 16 59.09	−17 25 11.66	−17	455
112	8.8	13.2	15.3	17.5	19.6	21.7	c	18 17.46	307	8	10.0	9.5	III	46.460	2 17 40.81	13 52 24.76	14	440
113	9.4	0.4	2.4	4.7	6.8	9.0	c	20 4.66	303	20	10.0	9.1	III	45.355	2 19 27.69	17 40 58.18	17	464
114	9.3	44.7	46.9	49.0	51.2	53.2	c	20 49.00	306	54	10.0	10.0	III	47.790	2 20 12.33	14 6 0 30	14	449
115	9.0	41.5	43.7	45.8	48.2	50.3	c	22 45.90	303	24	10.0	9.9	III	46.490	2 22 8.92	17 36 36.49	17	472
116	8.5	3.3	5.5	7.6	9.9	11.9	c	24 7.64	306	22	10.0	10.4	III	44.180	2 23 30.90	14 39 11.78	14	463
117	8.0	2.0	4.1	6.3	8.6	10.7	c	29 6.34	306	12	10.0	10.5	III	47.220	2 28 29.57	14 48 15.20	15	453
118	8.0	47.7	49.9	52.0	54.2	56.2	c	29 52.00	306	24	10.0	9.6	III	46.470	2 29 15.24	14 36 29.66	14	478
119	9.3	26.8	29.0	31.0	33.0	34.9	c	30 1.46	307	2	10.0	9.8	V	48.770	2 29 24.76	13 57 45.03	14	479
120	9.5	41.6	43.9	46.0	48.1	50.5	c	31 46.02	304	26	10.0	9.2	III	47.690	2 31 9.08	−16 34 12.95	−16	467
121	9.1	42.9	45.1	47.3	49.5	51.7	c	32 47.30	303	8	10.0	9.4	III A	45.210	2 32 10.24	−17 49 49.57	−18	448
122	9.1	58.9	1.2	3.3	5.5	7.7	c	34 3.32	303	8	"	"	III C	50.650	2 33 26.25	17 57 47.14	18	450
123	8.9	46.1	48.3	50.5	52.8	54.9	c	34 50.52	306	56	10.0	9.0	III	50.880	2 34 13.78	14 3 5.18	14	496
124	9.0	40.2	42.2	44.0	45.8	48.3	a	36 13.79	306	8	10.0	9.6	I	50.740	2 35 36.98	14 51 8.74	15	472
125	6.5	13.5	15.7	17.8	20.0	22.1	c	36 17.82	306	8	"	"	III	45.875	2 35 41.01	14 52 43.67	15	473
126	9.2	42.5	44.6	46.7	48.9	51.0	c	36 46.74	306	8	"	"	V A	42.800	2 36 9.93	14 50 28.92	15	475
127	6.8	21.8	23.8	25.9	28.2	30.3	c	37 26.00	306	8	"	"	III C	47.320	2 36 49.17	14 58 42.44	15	478
128	9.6	33.8	35.9	38.0	40.4	42.5	c	39 38.12	303	6	10.6	8.4	III	47.580	2 39 1.02	17 54 21.76	18	462
129	8.0	1.9	4.0	6.0	8.3	10.4	c	41 6.12	305	10	10.0	8.5	III	45.330	2 40 29.20	15 50 58.93	16	498
130	9.4	5.8	7.8	10.0	12.0	14.3	c	43 9.98	306	20	10.0	8.6	III	47.340	2 42 33.16	−14 40 17.41	−14	531
131	9.4	52.0	54.2	56.3	58.5	0.6	c	43 56.32	306	20	"	"	V A	42.230	2 43 19.49	−14 38 41.80	−14	533
132	8.9	20.1	22.3	24.4	26.7	28.8	c	45 24.46	304	6	10.0	8.9	III	48.940	2 44 47.43	16 53 54.07	17	544
133	9.3	19.6	21.7	23.8	26.1	28.0	c	48 23.84	306	24	10.0	9.6	III A	45.720	2 47 47.01	14 33 33.94	14	551
134	9.4	17.9	20.0	22.0	24.3	26.5	c	49 22.14	306	24	"	"	III B	45.600	2 48 45.29	14 40 5.20	14	555
135	8.9	38.4	40.5	42.6	44.8	47.0	c	58 42.66	306	10	10.0	9.5	III A	46.120	2 58 5.77	14 47 30.08	14	593
136	9.0	37.7	39.7	41.9	44.2	46.4	c	59 41.98	306	10	"	"	III C	47.740	2 59 5.08	14 56 40.87	15	535
137	9.1	48.4	50.6	52.8	54.9	57.0	c	1 52.74	305	56	10.0	9.2	III A	45.470	3 1 15.83	15 1 44.36	15	539
138	9.0	13.0	15.2	17.3	21.7	23.4	$c_3\ d_2$	7 13.03	303	12	10.0	9.2	V	46.870	3 6 35.82	17 48 44.61	17	613
139	8.6	36.7	38.7	40.5	42.3	44.7	a	9 10.75	303	0	10.0	9.2	I	48.250	3 8 33.52	18 0 16.55	18	560
140	9.1	24.2	26.4	28.5	30.8	32.8	c	9 28.54	303	0	"	"	III	50.630	3 8 51.31	−17 59 32.51	−18	561
141	8.2	11.5	13.5	15.4	17.2	19.5	a	10 45.11	306	12	10.0	9.5	I	45.880	3 10 8.18	−14 48 52.15	−14	627
142	8.0	54.5	56.7	58.9	1.0	3.1	c	10 58.84	306	48	10.0	9.7	III	48.800	3 10 21.98	14 11 55.82	14	629
143	9.1	52.9	55.0	57.1	59.4	1.4	c	12 57.16	307	16	10.0	9.6	III	47.840	3 12 20.33	13 44 13.56	13	621
144	8.6	58.5	0.0	4.2	6.3	8.5	(b_2c_1)	14 8.49	306	46	10.0	10.0	III (A)	45.780	3 13 31.62	14 11 39.32	14	641
145	9.0	19.3	21.4	23.5	27.6	29.3	$c_3\ d_2$	14 19.22	306	46	"	"	V	48.600	3 13 42.35	14 14 1.99	14	643
146	9.6	0.2	2.4	4.5	9.0	10.5	$c_3\ d_2$	17 0.25	303	52	10.0	9.4	V	49.040	3 16 23.09	17 8 3.72	17	648
147	9.1	0.0	2.1	4.2	6.3	8.5	c	20 4.22	307	20	10.0	9.1	III	46.640	3 19 27.39	13 40 38.91	13	642
148	9.0	47.0	49.2	51.3	53.6	55.6	c	20 51.34	307	6	10.0	9.3	III	46.100	3 20 14.48	13 54 50.08	14	663
149	9.1	28.9	31.1	33.4	35.5	37.7	c	22 33.32	304	38	10.0	9.6	III	48.400	3 21 56.21	16 22 13.86	16	636
150	9.3	51.4	53.5	55.7	57.8	0.1	c	22 55.70	303	48	10.0	9.4	V	46.650	3 22 18.50	−17 12 51.74	−17	667
151	9.2	48.0	50.3	52.5	54.8	56.8	c	24 52.48	303	12	10.0	9.0	III	44.570	3 24 15.22	−17 49 33.20	−17	671
152	8.9	30.9	33.1	35.3	37.3	39.5	c	25 35.22	303	44	10.0	9.1	III B	45.110	3 24 58.00	17 20 34.50	17	677
153	8.9	56.7	59.0	1.1	3.3	5.5	c	26 1.12	303	44	"	"	III	43.610	3 25 23.91	17 17 50.14	17	678
154	9.1	33.3	35.5	37.6	39.8	41.8	c	26 37.60	305	50	10.0	9.3	V	43.180	3 26 0.61	15 11 53.10	15	609
155	9.2	13.5	15.4	17.2	19.2	21.3	a	28 47.02	306	12	10.0	9.5	I B	48.500	3 28 10.06	14 51 20.72	15	614
156	8.9	55.2	57.1	59.0	0.8	3.0	a	29 28.71	306	12	"	"	I	48.840	3 28 51.75	14 48 1.32	14	697
157	8.0	40.1	42.2	44.4	46.7	48.7	c	29 44.42	305	34	10.0	10.1	III	44.030	3 29 7.40	−15 27 36.85	−15	617

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
158	9.1	3.3	5.3	7.9	10.0	14.2	c_2 d_1	30 5.56	304 52 10.0 10.2	V 43.340	3 29 28.46	−16 9 53.70	−16 657
159	......	22.3	24.3	26.2	28.0	30.4	a	31 56.32	303 34 10.0 10.0	III B 38.180	3 31 19.07	17 32 49.72	17 696
160	8.0	7.3	9.4	11.6	13.8	16.0	c	32 11.62	303 34 " "	V A 43.280	3 31 34.38	−17 24 44.70	−17 697
161	9.2	30.4	32.6	34.4	36.3	38.6	a	36 4.46	304 2 10.0 9.7	I 50.320	3 35 27.27	−16 57 41.83	−17 709
162	7.5	6.6	8.9	11.0	13.3	15.4	c	36 11.04	305 28 10.0 9.8	V 46.260	3 35 34.00	15 32 57.99	15 634
163	......	12.0	14.2	16.4	18.5	21.0	c	37 16.42	303 20 10.0 8.6	V 45.580	3 36 39.14	−17 41 19.00	−17 712

Reduction Elements. Zone 148.

1895.	OBSERVED.			ADOPTED.		
	c	b	a	c	b	a
	s	s	s	s	s	s
October 23.3....	−0.092	+0.044	−0.431	−0.066	+0.068	−0.410
23.6....	−0.039	+0.093	−0.390			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ω^2 Aquarii		i^2 Aquarii		2 Ceti		β Ceti		τ^2 Eridani		τ^4 Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	305 54 10.25		301 32 9.90		303 6 9.75		302 28 9.50		299 36 9.05		298 54 9.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.980	6 15.92	47.530	6 26.81	48.455	6 43.85	46.985	6 15.75	46.505	6 5.87		5 58.48
II Red. to Mer......	47.015	0.15	.610	0.19	.450	0.18	47.010	0.18	.520	0.21		0.22
VI Inclination	.180		.745		.620		.140		.600		46.160	−1.68
VII Refraction	.175	1 20.5	.740	1 35.0	.650	1 29.4	.180	1 31.9	.630	1 43.4	.195	1 46.4

	δ Eridani		Lalande 7685	
	° ′ ″		° ′ ″	
CIRCLE READING.	310 54 9.70		302 42 9.50	
	r	′ ″	r	′ ″
I Microm. Eq......	47.960	6 34.75	46.420	6 5.33
II Red. to Mer......	48.010	0.10	.470	0.18
VI Inclination	.130		.630	
VII Refraction	.180	1 8.0	.620	1 31.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Cephei	23 35 51.81	8	+1.07	[−46.55]	38 6	....
ω^2 Aquarii	23 38 7.63	11	−0.37	−46.62	305 59 5.8	16.8
i^2 Aquarii	23 46 47.04	11	−0.40	−46.56	301 37 1.9	16.6
2 Ceti	23 59 12.76	11	−0.39	−46.64	303 11 24.4	17.0
β Ceti	0 39 10.37	11	−0.40	−46.70	302 32 53.5	16.7
τ^2 Eridani	2 47 7.62	11	−0.42	−46.69	299 40 31.7	17.9
τ^4 Eridani	3 15 41.79	11	−0.42	−46.73	298 58 20.4	18.1
δ Eridani	3 39 3.95	11	−0.34	−46.72	310 59 36.6	18.3
Lalande 7685......	4 2 45.27	11	−0.39	−46.63	302 46 43.3	17.7
Groombridge 750..	4 4 48.51	6	+3.38	[−46.89]	46 20	....

h 0.015............dt.................... s −46.630

Hourly rate............ − 0.0181

Adopted Equator Point........ 321° 6′ 17.39″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
23 29	29.976	49.4	47.0
0 0	29.976	48.7	46.4
1 0	29.978	46.5	44.4
1 59	29.990	46.6	44.3
3 0	29.996	45.0	42.7
4 0	30.010	45.0	42.6

Notes.

29. Images very steady.

57, 93. Double, following and brighter observed.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0						
			302°	303°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	s	s
303	−0.392	0 0	......	+11.265	+11.282	+11.299	+11.315	+11.332	+11.348
304	0.384	0 30	......	10.947	10.979	11.010	11.041	11.070	11.099
305	0.377	1 0	......	10.658	10.704	10.749	10.792	10.834	10.876
306	0.370	1 30	......	10.402	10.461	10.517	10.572	10.628	10.682
307	0.363	2 0	+10.112	10.183	10.252	10.321	10.389	10.455	10.520
308	−0.357	2 30	+ 9.922	10.005	10.084	10.165	10.243	10.319	10.395
		3 0	......	9.872	9.961	10.049	10.136	10.221	10.306
		3 30	......	9.783	9.880	9.977	10.072	+10.165	+10.256
		4 0	......	+ 9.743	+ 9.847	+ 9.949	+10.049	......	......

APPARENT RIGHT ASCENSION.	D = Z. D. N. to 1895.0							R					
	302°	303°	304°	305°	306°	307°	308°	302° 30′	303° 30′	304° 30′	305° 30′	306° 30′	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″	″
0 0	.....	−21.54	−21.75	−21.96	−22.17	−22.38	−22.58	91.90	88.47	85.23	82.13	79.20	76.38
0 30	.....	23.23	23.40	23.57	23.74	23.91	24.07	92.09	88.65	85.41	82.30	79.36	76.54
1 0	.....	24.60	24.73	24.86	24.99	25.12	25.25	92.28	88.84	85.59	82.47	79.52	76.70
1 30	.....	25.68	25.78	25.87	25.96	26.04	26.14	92.32	88.88	85.62	82.51	79.56	76.74
2 0	−26.40	26.45	26.51	26.56	26.60	26.65	26.69	92.34	88.90	85.64	82.53	79.58	76.75
2 30	−26.85	26.87	26.88	26.88	26.89	26.90	26.90	92.51	89.06	85.80	82.68	79.73	76.90
3 0	.....	26.94	26.91	26.88	26.85	26.80	26.76	92.66	89.21	85.94	82.81	79.86	77.02
3 30	.....	26.67	26.60	26.52	26.45	−26.38	−26.30	92.68	89.23	85.96	82.83	79.87	77.04
4 0	.....	−26.06	−25.95	−25.84	−25.72	.....	.....	92.73	89.27	86.00	82.87	79.91	77.07

1895 OCTOBER 25. ZONE 149. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.5	15.1	17.4	19.4	21.6	23.7	c	21 19.44	307 6 10.0 10.6	III	45.220	1 20 41.96	−13 54 33.67	−14 276
2	8.9	20.0	22.2	24.3	26.5	28.7	c	23 24.34	306 56 10.0 10.5	III	44.020	1 22 46.84	14 4 57.55	14 284
3	8.7	53.3	55.3	57.3	58.9	1.2	a	24 26.80	306 56 " "	I B	41.260	1 23 49.29	14 9 2.29	14 285
4	8.8	40.6	42.8	44.7	46.5	48.7	a	25 14.19	307 20 10.0 10.0	I	45.775	1 24 36.70	13 40 21.93	13 269
5	8.0	18.7	20.8	22.9	25.2	27.3	c	25 22.98	307 20 " "	III B	43.600	1 24 45.48	13 44 18.47	13 270
6	9.0	9.9	12.2	14.2	16.4	18.5	c	26 14.24	306 4 10.0 10.4	III	46.870	1 25 36.67	14 56 5.79	15 274
7	8.3	13.3	15.6	17.6	19.7	21.8	c	27 17.60	306 48 10.0 11.0	V	47.150	1 26 40.07	14 11 59.67	14 294
8	8.9	42.9	44.8	47.0	49.3	51.3	c	30 47.06	306 36 10.0 11.1	V	45.535	1 30 9.50	14 24 31.83	14 298
9	8.0	33.0	35.1	37.0	39.0	40.9	e	31 7.53	307 6 10.0 10.4	V	48.340	1 30 30.00	13 53 37.08	14 299
10	9.0	42.2	44.3	46.6	48.7	50.8	c	34 46.52	306 34 10.0 10.1	III	48.125	1 34 8.93	−14 25 42.12	−14 311
11	9.0	12.5	14.7	16.8	18.8	21.0	c	35 16.76	306 56 10.0 10.6	III	50.820	1 34 39.20	−14 2 49.29	−14 312
12	9.1	22.5	24.7	26.9	29.0	31.2	c	37 26.86	306 6 10.0 9.8	III A	48.865	1 36 49.22	14 50 14.54	15 300
13	.....	41.8	43.8	46.0	48.4	50.5	c	38 46.10	306 6 " "	III C	49.490	1 38 8.45	14 59 44.39	15 304
14	8.8	34.7	36.8	38.8	41.0	43.0	c	39 38.86	307 20 10.0 9.6	III	49.635	1 39 1.30	13 39 12.35	13 314
15	8.6	31.2	33.4	35.5	37.6	39.7	c	40 35.48	306 40 10.0 10.5	III	46.850	1 39 57.87	14 20 7.34	14 328
16	.....	45.3	47.4	51.7	53.3	55.8	c_4 d_3	42 43.15	306 40 10.0 10.9	VI B	47.020	1 42 5.53	14 23 19.84	14 335
17	8.7	27.5	29.5	31.7	36.0	37.5	c_3 d_2	43 27.45	307 18 10.0 10.1	V	47.990	1 42 49.86	13 41 45.91	13 322
18	8.6	45.2	47.5	49.7	51.8	54.0	c	45 49.64	306 52 10.0 10.6	III B	44.665	1 45 12.01	14 12 3.05	14 339
19	8.4	38.9	40.9	42.8	44.5	46.9	a	47 12.40	306 52 " "	I	43.580	1 46 34.76	14 9 9.36	14 343
20	7.6	20.8	22.9	25.0	27.2	29.3	c	47 25.04	307 14 10.0 10.1	III A	44.210	1 46 47.43	−13 43 42.74	−13 337
21	9.1	48.6	50.9	53.0	55.2	57.3	c	47 53.00	306 26 10.0 10.4	V	46.460	1 47 15.34	−14 34 18.38	−14 346
22	9.2	21.0	23.3	25.3	27.6	29.7	c	49 25.38	307 16 10.0 10.4	III	46.410	1 48 47.77	13 44 16.07	13 347
23	9.2	18.2	20.3	22.4	24.6	26.9	c	50 22.48	306 50 10.0 10.4	III	47.310	1 49 44.84	14 10 0.17	14 355
24	8.9	0.6	2.7	4.7	7.0	9.1	c	51 4.82	306 26 10.0 10.5	III	41.740	1 50 27.14	14 35 48.28	14 358
25	9.3	18.7	20.9	23.0	25.3	27.3	c	52 23.04	306 26 " "	III C	47.975	1 51 45.34	14 40 15.09	14 363
26	9.2	45.1	47.4	49.5	51.7	53.8	c	52 49.50	306 26 " "	V B	46.580	1 52 11.80	14 37 30.61	14 364
27	9.4	5.5	7.5	9.5	11.7	13.8	c	54 9.60	306 26 " "	III A	46.450	1 53 31.91	14 31 3.18	14 368
28	8.3	28.4	30.6	32.8	34.9	36.9	c	55 32.72	307 12 10.0 10.5	III	46.890	1 54 55.07	13 48 8.38	14 372
29	9.1	36.8	39.0	41.2	43.3	45.5	c	57 41.16	306 30 10.0 11.0	III	48.145	1 57 3.46	14 29 46.42	14 378
30	8.2	15.9	17.9	20.2	22.3	24.3	c	58 20.12	307 22 10.0 9.7	III	49.250	1 57 42.48	−13 37 23.67	−13 369
31	8.0	14.3	16.4	18.6	20.8	22.7	c	0 18.56	306 44 10.0 10.6	III	42.480	1 59 40.86	−14 17 35.29	−14 386
32	9.0	13.0	15.3	17.4	19.7	21.8	c	2 17.44	306 44 " "	III C	45.865	2 1 39.72	14 22 56.98	14 394
33	8.9	4.0	6.0	7.8	9.8	12.1	a	5 37.48	307 20 10.0 9.5	I	44.610	2 4 59.79	13 40 53.12	13 392
34	8.7	48.6	50.7	52.8	55.0	57.1	c	5 52.84	307 4 10.0 10.8	III	48.010	2 5 15.14	13 55 49.49	14 402
35	9.1	23.6	25.6	27.8	30.0	32.1	c	9 27.82	307 14 10.0 9.5	III	50.340	2 8 50.12	13 45 5.84	13 411
36	9.1	48.5	50.6	52.8	55.0	57.2	c	12 52.82	306 24 10.0 10.7	III B	43.230	2 12 15.04	14 40 38.10	14 419
37	8.0	53.7	55.9	57.9	0.1	2.3	c	13 57.98	306 24 " "	III	48.360	2 13 20.20	14 35 46.64	14 423
38	9.3	35.5	37.6	39.8	42.0	44.1	c	14 39.80	306 24 " "	III C	46.850	2 14 2.00	14 42 41.96	14 424
39	8.2	3.2	5.4	7.5	9.8	11.8	c	16 7.54	305 58 10.0 10.9	III B	48.350	2 15 29.71	15 5 1.77	15 402
40	9.1	50.2	52.3	54.1	55.9	58.2	a	17 23.86	305 58 " "	I	49.950	2 16 46.03	−15 1 16.56	−15 407
41	7.8	35.6	37.7	39.8	42.0	44.1	c	17 39.84	306 16 10.0 11.1	III	46.370	2 17 2.04	−14 44 25.92	−14 434
42	9.0	41.3	43.5	45.4	47.7	49.8	c	18 45.54	306 48 10.0 11.0	III	45.350	2 18 7.77	14 12 44.34	14 442
43	9.2	43.8	45.9	48.0	50.2	52.4	c	19 48.06	307 20 10.0 10.0	III A	44.430	2 19 10.33	13 37 45.96	13 438
44	7.5	13.0	15.2	17.3	19.5	21.6	c	20 17.32	307 20 " "	III B	42.880	2 19 39.58	13 44 44.47	13 440
45	8.9	29.7	31.8	34.0	36.2	38.3	c	21 34.00	306 40 10.0 10.2	III	45.800	2 20 56.21	14 20 37.19	14 453
46	9.1	11.9	14.1	16.3	18.5	20.6	c	22 16.28	306 40 " "	III	48.510	2 21 38.49	14 19 45.38	14 455
47	9.0	26.0	28.2	30.4	32.6	34.7	c	23 30.38	306 52 10.0 10.9	III	50.820	2 22 52.60	14 7 0.46	14 459
48	8.5	32.8	34.9	37.0	39.2	41.4	c	25 37.06	307 20 10.0 10.0	III	42.660	2 24 59.31	13 41 36.81	13 462
49	9.1	3.7	5.8	7.9	10.1	12.3	c	26 7.96	307 20 " "	III B	44.650	2 25 30.21	13 44 12.02	13 464
50	8.7	10.8	13.1	15.3	17.4	19.6	c	30 15.24	306 46 10.0 10.1	III	46.760	2 29 37.43	−14 14 20.84	−14 481
51	9.0	3.2	5.3	7.5	9.8	11.8	c	31 7.52	306 46 " "	III	44.480	2 30 29.71	−14 15 4.85	−14 485
52	9.1	39.3	41.5	43.6	45.9	47.8	c	32 43.62	307 18 10.0 9.7	III A	44.290	2 32 5.84	13 39 52.27	13 493
53	9.0	11.7	13.7	15.9	18.1	20.1	c	34 15.90	307 18 " "	III C	50.360	2 33 38.12	13 47 37.77	13 498
54	8.3	13.8	15.9	18.0	20.3	22.3	c	35 18.06	307 18 " "	III B	45.770	2 34 40.29	−13 45 53.22	−13 502

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
55	9.1	14.2	16.5	18.5	20.7	22.8	c	37 18.54	307 2 10.0 9.9	III A 44.200	[2 36 40.74]	−13 55 55.87	−14 507
56	8.5	33.4	35.5	37.6	39.9	41.9	c	37 37.66	307 2 " "	III B 44.700	2 36 59.85	14 2 15.04	14 508
57	9.3	11.4	13.6	15.7	17.9	20.0	c	38 15.72	307 2 " "	III C 44.810	2 37 37.90	14 5 26.01	14 512
58	9.1	18.9	21.3	23.3	25.4	27.5	c	40 23.28	307 2 " "	III C 41.220	2 39 45.45	14 6 35.48	14 521
59	8.7	42.8	45.0	47.2	49.4	51.4	c	40 47.16	307 2 " "	V B 48.110	2 40 9.34	14 1 12.03	14 523
60	8.0	45.1	47.3	49.4	51.6	53.7	c	42 49.42	307 14 10.0 9.9	III 49.010	2 42 11.62	−13 45 39.96	−13 525
61	9.0	19.7	21.7	23.8	26.1	28.1	c	44 23.88	307 14 " "	III 48.400	2 43 46.07	−13 45 52.10	−13 535
62	7.8	17.0	19.0	20.8	22.7	24.9	a	45 50.49	306 52 10.0 10.0	I C 44.190	2 45 12.64	14 15 39.10	14 541
63	9.1	50.6	52.8	54.9	57.1	59.2	c	45 54.92	306 52 " "	III A 41.230	2 45 17.08	14 6 55.72	14 543
64	9.0	45.4	47.6	49.6	51.8	53.8	c	49 49.64	307 14 10.0 10.4	III 48.700	2 49 11.82	13 45 47.66	13 552
65	7.5	43.6	45.7	47.9	50.0	52.1	c	50 47.86	306 34 10.0 9.9	III 48.610	2 50 9.98	14 25 51.85	14 557
66	8.0	42.8	45.0	47.0	49.2	51.4	c	51 47.08	306 54 10.0 10.4	III 47.380	2 51 9.23	14 6 14.48	14 564
67	9.0	9.8	12.0	14.2	16.4	18.5	c	53 14.18	307 16 10.0 10.3	III 51.240	2 52 36.36	13 42 59.87	13 560
68	8.3	46.8	49.0	51.0	53.3	55.5	c	54 51.12	307 16 " "	III 46.340	2 54 13.29	13 44 34.38	13 564
69	7.0	44.6	46.7	48.7	51.0	53.1	c	55 48.82	306 56 10.0 10.5	III 45.340	2 55 10.96	14 4 54.66	14 576
70	7.8	17.1	19.2	21.4	23.5	25.7	c	58 21.38	307 6 10.0 10.2	III 43.440	2 57 43.53	−13 55 31.57	−14 591
71	8.2	23.9	26.0	27.7	29.6	31.9	a	1 57.37	307 16 10.0 10.3	I B 41.575	3 1 19.53	−13 49 19.51	−14 601
72	8.6	1.2	3.2	5.0	6.9	9.5	a	2 34.70	307 16 " "	I A 43.490	3 1 56.87	13 42 14.33	13 592
73	9.3	38.6	40.3	44.5	46.7	48.8	$b_2 c_3$	2 48.79	305 50 10.0 10.5	III 49.560	3 2 10.82	15 9 38.90	15 543
74	6.5	8.8	10.8	12.9	15.0	17.2	c	3 12.94	306 52 10.0 10.9	V 47.220	3 2 35.07	14 8 22.11	14 604
75	9.0	47.1	49.1	50.9	52.8	55.0	a	5 20.52	307 16 10.0 10.1	I 49.010	3 4 42.68	13 43 44.88	13 599
76	9.4	44.8	46.8	48.6	50.4	52.7	a	6 18.20	307 16 " "	I 44.070	3 5 40.35	13 45 19.98	13 601
77	8.0	24.2	25.7	30.0	32.2	34.4	$b_2 c_3$	6 34.31	306 14 10.0 10.5	III 43.535	3 5 56.36	14 47 34.53	14 611
78	9.0	45.9	48.1	50.2	54.4	55.9	$c_3 d_2$	6 45.90	307 8 10.0 11.1	V B 43.070	[3 6 8.03]	13 56 55.50	14 612
79	7.0	21.0	23.1	25.2	27.4	29.5	c	7 25.24	307 8 " "	V 41.990	3 6 47.38	[13 54 2.97]	14 617
80	8.9	59.2	1.5	3.8	6.0	10.0	$c_2 d_1$	8 1.54	306 24 10.0 11.1	V 45.470	3 7 23.61	−14 36 58.41	−14 620
81	8.0	27.3	29.4	31.5	33.7	35.8	c	9 31.54	307 4 10.0 10.6	III B 43.380	3 8 53.66	−14 0 49.31	−14 625
82	9.0	8.2	10.2	12.4	14.5	16.6	c	11 12.38	307 4 " "	III A 51.720	3 10 34.52	13 51 41.11	14 630
83	9.1	14.8	16.8	18.9	21.1	23.2	c	13 18.96	307 4 " "	III C 43.300	3 12 41.08	14 4 4.92	14 638
84	9.2	45.9	47.9	49.9	51.7	53.9	a	13 19.44	307 4 " "	I B 43.700	3 12 41.56	14 0 42.64	14 637
85	9.1	40.7	43.0	45.0	49.3	51.0	$c_3 d_2$	13 40.79	306 30 10.0 10.1	V A 42.190	3 13 2.87	14 28 48.13	14 639
86	7.8	33.1	35.2	37.3	39.7	41.7	c	14 37.40	306 30 " "	III C 46.390	3 13 59.47	14 37 7.90	14 646
87	8.4	58.7	0.9	3.0	5.2	7.3	c	16 3.02	306 30 " "	III 48.720	3 15 25.09	14 29 57.47	14 648
88	8.8	31.2	33.3	35.4	37.7	39.6	c	18 35.44	306 52 10.0 10.5	III 48.350	3 17 57.54	14 8 4.12	14 653
89	8.0	20.2	22.4	24.6	26.8	28.9	c	19 24.58	306 32 10.0 10.0	III (C) 48.000	3 18 46.65	14 34 38.50	14 657
90	9.1	54.5	56.6	58.7	0.9	3.0	c	19 58.74	306 32 " "	III 51.580	3 19 20.82	−14 27 3.79	−14 658
91	7.8	52.7	54.8	57.1	59.0	1.3	c	20 56.98	306 32 " "	III 48.160	3 20 19.06	−14 28 9.73	−14 665
92	9.0	17.3	19.6	21.6	23.9	26.0	c	22 21.68	306 32 " "	III 43.660	3 21 43.75	14 29 36.54	14 669
93	8.9	39.1	41.2	43.4	45.5	47.7	c	25 43.38	306 18 10.0 9.9	III B 45.325	3 25 5.42	14 46 19.70	14 682
94	9.0	33.3	35.3	37.3	39.2	41.5	a	27 6.99	306 18 " "	I 50.110	3 26 29.02	14 41 33.51	14 688
95	7.5	2.7	4.8	6.9	9.1	11.3	c	27 6.96	307 8 10.0 11.0	V A 43.600	3 26 29.08	13 50 23.15	13 674
96	9.5	53.8	55.9	58.0	0.1	2.2	c	28 58.00	307 8 " "	III C 46.230	3 28 20.12	13 59 13.36	14 691
97	8.1	15.9	18.0	20.2	22.4	24.5	c	29 20.20	307 8 " "	III B 43.880	3 28 42.32	13 56 45.67	14 696
98	8.0	0.1	2.3	4.3	6.6	8.6	c	30 4.38	306 50 9.0 9.5	III 48.970	3 29 26.48	14 9 57.03	14 699
99	9.1	31.9	34.0	36.0	38.5	40.4	c	32 36.16	307 4 10.0 10.5	III A 42.870	3 31 58.28	13 54 37.91	14 703
100	9.0	58.4	0.6	2.6	4.9	7.0	c	33 2.70	306 44 9.6 10.5	III 50.990	3 32 24.78	−14 15 18.75	−14 708
101	8.0	44.0	46.2	48.2	50.4	52.6	c	33 48.28	306 44 " "	III 44.440	3 33 10.36	−14 17 24.72	−14 711
102	9.1	29.6	31.7	33.8	36.1	38.2	c	34 33.88	306 44 " "	III B 48.030	3 33 55.96	14 19 29.35	14 715
103	9.2	41.0	......	45.1	47.3	49.4	c	36 45.16	306 44 " "	III 51.230	3 36 7.25	14 15 15.35	14 721
104	8.9	10.7	12.8	15.0	17.2	19.4	c	37 15.02	306 44 " "	III B 48.670	3 36 37.10	14 19 17.94	14 726
105	8.3	2.0	4.2	6.3	8.5	10.6	c	40 6.32	307 18 10.0 9.4	III 45.630	3 39 28.46	13 43 2.72	13 725
106	8.2	38.2	40.4	42.6	44.7	46.8	c	40 42.54	307 18 " "	III B 43.690	3 40 4.67	13 46 53.42	13 729
107	7.7	51.3	53.5	55.6	57.8	59.9	c	42 55.62	306 14 10.0 10.4	III 45.090	3 42 17.64	14 47 16.60	14 749
108	8.5	17.9	20.0	22.1	24.3	26.6	c	43 22.18	305 56 10.0 10.2	III 46.820	3 42 44.18	15 4 44.74	15 659
109	8.9	16.8	18.4	22.4	24.6	26.7	$b_2 c_3$	44 26.77	307 10 10.0 10.5	III C 45.840	3 43 48.88	13 57 26.17	14 752
110	8.6	32.2	34.0	38.5	40.1	42.6	$c_4 d_3$	44 29.94	307 10 " "	VI 47.110	3 43 52.06	−13 50 37.56	−13 745
111	8.8	37.7	39.9	42.0	44.2	46.4	c	45 42.04	306 50 10.0 10.4	V 44.480	3 45 4.14	−14 11 28.85	−14 757
112	8.0	10.9	13.0	15.1	17.4	19.6	c	48 15.20	306 50 " "	III 49.380	3 47 37.30	14 9 54.34	14 765
113	9.2	34.8	37.0	39.2	41.3	43.5	c	49 39.16	306 50 " "	III B 48.880	3 49 1.25	14 13 17.69	14 769
114	8.0	51.7	54.0	56.2	58.5	0.7	(c)	49 56.22	306 50 " "	....	3 49 18.30	14 17 26	14 772
115	9.1	29.8	32.0	34.0	38.3	39.9	($c_3 d_2$)	50 29.80	306 50 " "	III A 48.460	3 49 51.90	14 6 57.38	14 775
116	9.1	35.3	37.3	41.5	43.1	45.8	$c_4 d_3$	51 33.05	306 38 10.0 10.6	VI 45.550	3 50 55.13	14 23 11.42	14 780
117	6.4	21.5	23.8	26.0	28.0	30.2	c	52 25.90	307 12 10.0 9.7	....	3 51 48.02	13 53 18	14 783
118	9.0	2.6	4.7	6.8	8.9	13.3	$c_2 d_1$	53 4.71	307 12 " "	V C 46.515	3 52 26.83	13 55 17.62	14 786
119	9.2	30.6	32.8	34.8	36.9	38.6	e	53 5.27	307 12 " "	VII B 44.350	3 52 27.39	13 52 48.02	14 787
120	4.	55.3	57.4	59.5	1.7	3.9	c	53 59.56	307 12 " "	V A 40.420	3 53 21.69	−13 47 33.68	−13 781
121	9.1	38.0	40.0	42.2	44.4	46.5	c	55 42.22	307 12 " "	III 43.350	3 55 4.36	−13 49 51.92	−13 788
122	9.1	18.9	21.0	23.2	25.5	27.5	c	56 23.22	307 12 " "	III C 45.810	3 55 45.35	13 55 31.13	14 797
123	9.1	32.5	34.7	36.8	39.0	41.1	c	57 36.82	306 54 10.0 10.0	III 48.050	3 56 58.93	14 6 23.11	14 803
124	9.0	33.9	36.0	38.2	40.4	42.4	c	59 38.18	307 16 10.0 10.0	III 43.990	3 59 0.33	13 45 40.68	13 804
125	8.5	10.1	12.2	14.3	16.5	18.7	c	0 14.36	306 54 10.0 10.5	III 45.575	3 59 36.47	14 7 11.28	14 810
126	9.1	6.9	8.8	10.7	12.5	14.8	a	1 40.36	306 42 10.0 10.2	I 48.290	4 1 2.45	14 18 18.88	14 816
127	8.9	49.4	51.6	53.7	55.9	58.0	c	1 53.72	306 42 " "	III 51.720	4 1 15.81	14 17 14.65	14 818
128	8.9	35.5	37.7	39.7	42.0	43.9	c	2 39.76	306 20 10.0 9.7	III 48.210	4 2 1.80	14 40 23.61	14 820
129	8.6	34.5	36.5	38.6	40.8	43.0	c	5 38.68	305 58 10.0 10.7	III 44.680	4 5 0.70	15 3 32.99	15 730
130	9.4	11.8	13.8	16.2	18.3	20.5	c	6 16.12	305 58 " "	III C 46.680	4 5 38.13	−15 9 21.02	−15 732

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
131	9.2	2.9	5.0	7.0	9.3	11.3	c	7 7.10	305 58 10.0 10.7	III A	41.440	4 6 29.12	−15 1 20.28	−15 738
132	8.0	6.0	8.1	10.2	12.4	14.6	c	8 10.26	307 8 10.0 10.0	III	44.240	4 7 32.40	13 53 39.24	14 837
133	8.7	10.7	12.8	14.9	17.0	19.3	c	10 14.94	306 52 10.0 10.8	III	49.210	4 9 37.06	14 8 4.98	14 844
134	9.0	41.5	43.7	45.9	48.0	50.0	c	10 45.82	306 36 10.0 10.4	III	48.100	4 10 7.91	14 24 27.45	14 846
135	9.1	26.0	28.1	30.3	31.9	34.0	e	11 0.49	306 22 10.0 10.3	V	45.070	4 10 22.56	14 39 27.76	14 848
136	8.9	18.2	20.3	22.4	24.6	26.8	c	12 22.46	306 50 10.0 10.0	III	47.190	4 11 44.58	14 10 44.98	14 854
137	8.7	21.0	23.3	25.3	27.5	29.6	c	13 25.34	307 16 10.0 9.9	III	51.080	4 12 47.51	13 43 29.51	13 852
138	9.6	51.1	53.3	55.4	57.5	59.6	c	13 55.38	307 16 " "	V C	47.700	4 13 17.54	13 51 0.76	13 855
139	9.5	44.0	46.0	48.1	50.4	52.3	c	14 48.16	306 16 10.0 11.0	V	51.740	4 14 10.22	14 43 21.06	14 869
140	8.8	51.0	53.3	55.4	57.4	59.6	c	15 55.34	306 16 " "	V C	51.320	4 15 17.40	−14 49 55.53	−14 872
141	9.1	13.0	15.0	16.8	18.8	21.0	a	19 46.53	306 46 10.0 10.0	I	47.000	4 19 8.66	−14 14 49.98	−14 892
142	9.0	48.4	50.5	52.6	54.8	57.0	c	19 52.66	306 46 " "	III	47.220	4 19 14.79	14 14 47.28	14 893
143	9.1	31.2	33.2	35.3	37.6	39.6	c	22 35.38	306 34 10.0 10.4	III	43.340	4 21 57.50	14 28 3.13	14 901
144	9.4	17.1	19.4	21.5	23.8	25.9	c	24 21.54	307 10 10.0 9.9	III	48.070	4 23 43.72	13 50 31.50	13 888
145	9.3	54.9	57.1	59.3	1.4	3.6	c	24 59.26	307 10 " "	III B	51.040	4 24 21.44	13 52 48.01	13 892
146	8.0	6.2	8.1	10.2	12.6	14.6	c	26 10.34	307 10 " "	III A	43.900	4 25 32.53	13 48 36.79	13 896
147	7.0	53.2	55.0	57.0	58.9	1.0	a	27 26.57	307 10 " "	I	45.060	4 26 48.75	13 51 28.88	13 904
148	9.4	23.6	25.7	27.9	30.0	32.2	c	27 27.88	307 10 " "	III	46.300	4 26 50.06	13 51 6.60	13 905
149	9.3	14.0	16.1	18.3	20.5	22.6	c	28 18.30	307 10 " "	III A	45.930	4 27 40.49	13 47 58.62	13 910
150	9.3	3.5	5.5	7.4	9.1	11.4	a	32 37.07	306 10 10.0 10.0	I	46.170	4 31 59.16	−14 51 12.34	−14 929
151	9.2	37.1	39.1	41.0	42.8	45.0	a	33 10.62	306 42 10.0 11.0	I	46.130	4 32 32.77	−14 19 11.25	−14 931
152	8.8	42.7	44.8	46.7	48.7	50.5	e	37 17.18	306 54 10.0 10.1	VII	44.060	4 36 39.37	−14 7 56.36	−14 942

Reduction Elements. Zone 149.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
October 25.3....	−0.155	−0.023	−0.310	−0.118	+0.024	−0.310
25.6....	−0.080	+0.071				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 1691		η Ceti		θ Ceti		ε Sculptoris		Lalande 8205		53 Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	300 50 10.10		310 18 10.30		312 18 10.25		295 28 9.65		300 8 10.05		306 32 9.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.600	6 6.65	44.030	5 19.77	46.330	6 3.85		5 54.42		6 47.98	43.870	5 15.90
II Red. to Mer......	.610	0.20	.085	0.11	.410	0.09	45.835	0.23		0.21	.850	0.14
VI Inclination		1.68	.240		.535		46.000	−0.67	48.750	−1.68	44.050	
VII Refraction.......		1 35.8	.285	1 7.6	.555	1 3.0	.065	1 59.9	.770	1 38.9	.060	1 17.7

	54 Eridani		60 Eridani	
	° ′ ″		° ′ ″	
CIRCLE READING.	301 10 10.00		304 38 9.00	
	r	′ ″	r	′ ″
I Microm. Eq......	45.290	5 43.92	45.960	5 56.31
II Red. to Mer......	.360	0.20	46.020	0.16
VI Inclination	.515		.130	
VII Refraction.......	.510	1 35.0	.150	1 23.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 1691......	0 54 25.45	11	−0.40	−47.71	300 54 42.8	17.8
43 H. Cephei.........	0 55 25.85	7	+1.76	[−47.91]	46 46	....
η Ceti..............	1 4 10.64	11	−0.34	−47.81	310 22 22.6	17.4
θ Ceti..............	1 19 38.73	11	−0.34	−47.86	312 23 11.2	16.2
ε Sculptoris	1 41 36.13	11	−0.43	−47.87	295 32 3.7	17.9
Lalande 8205......	4 16 55.88	11	−0.40	−47.63	300 13 17.7	16.6
53 Eridani...........	4 34 13.92	11	−0.36	−47.67	306 36 7.8	18.0
54 Eridani...........	4 36 42.45	11	−0.40	−47.57	301 14 19.1	17.8
60 Eridani...........	4 46 19.11	11	−0.38	−47.50	304 42 42.2	17.7

h 1.250........ ....*dt* .... s −47.812

Hourly rate .... + 0.0665

Adopted Equator Point ....321° 6′ 17.42″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
0 58	29.734	53.2	51.6
2 0	29.732	52.9	51.2
2 59	29.732	51.9	51.1
3 58	29.736	51.6	50.0
4 43	29.734	50.9	49.4

Notes.

28. Faint companion s. f.

Images very steady throughout.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				D=Z. D. N. to 1895.0				R		
			305°	306°	307°	308°	305°	306°	307°	308°	305° 30′	306° 30′	307° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
305	−0.373	1 0	......	+10.780	+10.822	+10.864	.....	−24.85	−24.99	−25.13	80.59	77.71	74.96
306	0.367	1 30	......	10.556	10.611	10.665	.....	25.80	25.89	25.99	80.63	77.75	74.99
307	0.362	2 0	......	10.366	10.433	10.498	.....	26.42	26.47	26.53	80.65	77.77	75.01
308	−0.357	2 30	......	10.214	10.290	10.367	.....	26.70	26.72	26.73	80.67	77.79	75.02
		3 0	+10.016	10.103	10.189	10.275	−26.66	26.63	26.61	26.58	80.69	77.80	75.04
		3 30	9.937	10.032	10.125	10.218	26.30	26.23	26.16	26.09	80.80	77.91	75.14
		4 0	9.905	10.006	10.104	10.203	25.59	25.49	25.38	25.27	80.89	78.00	75.23
		4 30	+ 9.918	10.023	10.126	10.228	−24.57	24.43	24.28	24.13	80.95	78.06	75.28
		5 0	......	+10.082	+10.188	+10.292	.....	−23.07	−22.88	−22.70	81.00	78.11	75.34

1895 OCTOBER 28. ZONE 150. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°	
1	8.6	5.6	7.9	9.8	12.1	14.2	c	24 9.92	304 36 10.0 9.0	III	42.745	1 23 31.37	−16 25 30.67	−16	247
2	9.0	39.4	41.6	43.7	46.0	48.0	c	24 43.74	304 36 " "	III	48.050	1 24 5.18	16 23 48.98	16	248
3	7.0	39.5	41.6	43.8	46.0	48.3	c	25 43.84	304 46 10.0 8.1	III	45.280	1 25 5.29	16 14 42.28	16	253
4	8.9	14.3	16.3	18.6	20.8	23.0	c	27 18.60	304 4 10.0 9.0	III B	40.440	1 26 39.99	17 1 30.48	17	273
5	8.5	30.9	32.9	35.1	37.4	39.6	c	28 35.18	304 4 " "	III A	43.330	1 27 56.57	16 54 6.55	17	280
6	9.1	54.3	56.4	58.6	1.0	3.0	c	29 58.66	304 18 10.0 8.6	III	49.390	1 29 20.05	16 41 25.40	16	262
7	9.2	49.7	51.9	54.1	56.3	58.6	c	30 54.12	304 18 " "	III	51.130	1 30 15.50	16 40 52.17	16	266
8	6.0	40.5	42.8	45.0	47.0	49.3	c	31 44.92	305 6 10.0 8.4	III	45.240	1 31 6.34	15 54 43.08	16	270
9	8.0	32.9	35.0	37.1	39.0	40.9	e	32 7.14	304 34 10.0 8.5	VII B	40.170	1 31 28.52	16 31 38.18	16	273
10	8.0	38.3	40.6	42.5	44.4	46.3	e	33 12.59	304 34 " "	V B	43.730	1 32 33.96	−16 30 28.76	−16	278
11	7.5	7.9	9.9	12.2	14.2	16.4	c	34 12.12	304 34 " "	V A	47.430	1 33 33.49	−16 22 49.21	−16	279
12	8.6	59.3	1.4	3.6	5.8	7.9	c	35 3.60	304 34 " "	III B	44.130	1 34 24.96	16 30 19.92	16	283
13	9.0	13.8	15.9	18.1	20.5	22.4	c	37 18.14	305 16 10.0 8.3	III	47.040	1 36 39.54	15 44 9.23	15	298
14	......	30.6	32.7	34.7	36.5	38.8	a	40 4.58	304 36 10.0 8.5	I B	45.420	1 39 25.90	16 27 54.38	16	295
15	8.0	28.5	30.7	32.4	34.4	36.7	a	41 2.46	304 36 " "	I	48.985	1 40 23.78	16 23 33.05	16	301
16	9.1	0.1	2.0	4.0	5.8	8.0	a	44 33.83	305 6 10.0 7.7	I B	44.025	1 43 55.16	15 58 20.99	16	308
17	9.0	11.4	13.4	15.4	17.3	19.6	a	44 45.26	305 6 " "	III	43.120	1 44 6.59	15 55 26.86	16	309
18	8.6	16.3	18.3	20.2	22.0	24.2	a	45 50.09	304 44 10.0 8.2	I	47.540	1 45 11.39	16 16 1.56	16	314
19	9.2	4.1	5.9	10.1	12.2	14.4	b_2 c_3	46 14.39	304 22 10.0 7.5	III	52.450	1 45 35.67	16 36 30.43	16	316
20	9.0	42.3	44.5	46.3	48.3	50.2	e	46 16.45	304 22 " "	V B	47.480	1 45 37.72	−16 41 20.67	−16	317
21	8.0	12.4	14.6	16.8	19.0	21.0	c	47 16.76	305 4 10.0 8.9	V	44.580	1 46 38.07	−15 57 0.22	−16	320
22	8.0	54.8	57.1	59.3	1.2	2.9	e	47 29.17	304 12 10.0 8.5	VII	47.500	1 46 50.43	16 48 8.21	17	332
23	7.4	46.8	49.0	51.0	53.3	55.5	c	48 51.12	304 2 10.0 9.6	III	44.870	1 48 12.36	16 58 56.54	17	338
24	8.1	46.8	49.0	51.2	53.3	55.5	c	49 51.16	304 32 10.0 8.5	III	45.280	1 49 12.42	16 28 47.85	16	327
25	8.0	35.0	37.3	39.2	41.2	43.0	e	50 9.35	304 48	....	....	1 49 30.63	16 12 42	16	328
26	9.5	24.5	26.5	28.3	30.2	32.4	a	51 58.44	303 40 10.0 8.6	III	47.980	1 51 19.62	17 19 59.20	17	352
27	8.5	26.4	28.8	30.9	32.8	34.7	e	52 0.92	304 46 10.0 8.6	V	43.600	1 51 22.18	16 15 21.14	16	337
28	7.0	32.0	34.2	36.3	38.5	40.6	c	53 36.32	304 24 10.0 8.3	V	44.230	1 52 57.55	16 37 10.71	16	340
29	7.0	58.4	0.6	2.7	5.0	7.0	c	55 2.74	305 24 10.0 8.9	V	46.350	1 54 24.03	15 36 27.03	15	354
30	9.1	3.0	5.2	7.4	9.5	11.8	c	56 7.38	304 16 10.0 8.6	III C	49.680	1 55 28.57	−16 49 51.83	−17	366
31	9.2	24.2	26.6	28.7	30.8	33.0	c	57 28.66	304 16 " "	III	51.800	1 56 49.85	−16 42 45.25	−16	352
32	9.3	59.0	1.3	3.5	5.6	8.0	c	58 3.48	304 16 " "	III C	52.840	[1 57 24.66]	16 48 51.64	17	375
33	9.4	44.0	46.2	48.4	50.7	52.8	c	58 48.42	304 16 " "	III B	45.160	1 58 9.60	16 48 6.32	17	378
34	6.7	48.2	50.3	52.0	53.8	56.2	a	0 22.07	304 16 " "	I A	44.885	1 59 43.24	16 41 41.56	16	362
35	8.0	58.0	0.2	2.0	3.8	6.3	a	0 32.03	304 16 " "	III	41.495	1 59 53.20	16 46 3.77	16	364
36	8.0	29.0	31.2	33.4	35.5	37.6	c	0 33.34	304 16 " "	V C	43.410	1 59 54.50	16 51 54.41	17	383
37	6.2	6.5	8.7	10.8	13.0	15.0	c	2 10.80	305 10 10.0 8.3	III B	41.110	2 1 32.02	15 55 22.23	16	370
38	9.0	31.2	33.4	35.5	37.7	40.0	c	2 35.56	305 10 " "	III A	41.780	2 1 56.78	15 48 40.79	16	373
39	8.6	33.4	35.5	37.7	39.7	42.0	c	3 37.66	305 10 " "	III A	39.830	2 2 58.88	15 49 18.42	16	376
40	7.8	42.7	44.8	47.0	49.2	51.4	c	4 47.02	304 30 10.0 8.5	III A	40.800	2 4 8.18	−16 29 2.06	−16	379
41	7.5	24.5	26.7	28.9	31.0	33.1	c	5 28.84	304 30 " "	III B	39.530	2 4 49.99	−16 35 55.32	−16	382
42	7.8	13.7	15.9	17.8	19.5	21.8	a	6 47.57	305 12 10.0 8.2	I	50.370	2 6 8.78	15 47 10.75	16	389
43	7.5	56.4	58.6	0.8	2.9	5.0	c	7 0.74	305 50 10.0 8.0	III	47.080	2 6 21.99	15 10 13.72	15	381
44	9.1	58.6	0.7	3.0	5.1	7.4	c	8 2.96	304 8 10.0 8.4	III	49.620	2 7 24.07	16 51 30.19	17	413
45	8.0	19.8	22.0	24.2	26.4	28.5	c	8 24.18	304 8 " "	V	49.380	2 7 45.29	16 51 36.22	17	415
46	8.6	46.5	48.6	50.9	53.1	55.1	c	9 50.84	303 58 10.0 8.0	III	49.060	2 9 11.93	17 1 42.13	17	419
47	9.0	2.4	4.6	6.8	8.9	11.0	c	11 6.74	304 14 10.0 8.1	III B	45.260	2 10 27.84	16 50 7.76	17	429
48	8.0	31.5	33.6	35.7	38.0	40.0	c	12 35.76	304 14 " "	III A	41.955	2 11 56.85	16 44 42.89	16	414
49	9.1	45.4	47.6	49.7	51.8	54.0	c	12 49.70	304 14 " "	V	45.440	2 12 10.79	16 46 52.79	16	415
50	8.8	36.0	38.1	40.3	42.4	44.7	c	13 40.30	304 14 " "	III	42.770	2 13 1.38	−16 47 42.91	−17	440

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
51	8.7	35.6	37.6	39.6	41.9	44.0	c	16 39.74	305 18 10.0 8.5	III 42.960	2 16 0.88	−15 43 36.54	−15 406
52	7.3	27.5	29.6	31.8	33.9	36.2	c	17 31.80	304 48 10.0 8.6	III 43.540	2 16 52.90	16 13 27.10	16 432
53	7.9	15.0	17.1	19.3	21.5	23.7	c	18 19.32	305 18 10.0 8.8	III 49.250	2 17 40.47	15 41 36.10	15 414
54	9.1	47.7	49.8	51.9	54.3	56.3	c	18 52.00	305 0 10.0 8.6	III 48.560	2 18 13.11	15 59 50.48	16 435
55	6.5	0.0	2.0	4.3	6.5	8.6	c	20 4.28	304 18 10.0 8.3	III 46.580	2 19 25.33	16 42 31.14	16 438
56	6.0	49.8	51.8	54.1	56.3	58.4	c	21 54.08	305 14 10.0 7.4	III 43.530	2 21 15.20	15 47 27.71	15 426
57	8.6	45.5	47.6	49.8	51.9	54.0	c	24 49.76	304 36 10.0 7.6	III A 48.750	2 24 10.82	16 20 34.77	16 448
58	9.0	23.5	25.7	27.9	30.1	32.3	c	25 27.90	304 36 " "	III C 47.790	2 24 48.95	16 30 34.98	16 450
59	8.9	9.7	11.9	13.9	16.2	18.4	c	26 14.02	304 6 10.0 8.4	III 48.280	2 25 35.03	16 54 0.72	17 481
60	9.0	52.0	54.2	56.0	57.8	0.1	a	27 25.84	305 18 10.0 8.6	I B 47.475	2 26 46.94	−15 45 24.24	−15 445
61	8.6	32.6	34.8	36.8	39.1	41.3	c	27 36.92	305 18 " "	III 45.730	2 26 58.03	−15 42 46.22	−15 447
62	5.0	55.4	57.5	59.6	1.8	4.0	c	27 59.66	305 18 " "	V A 41.250	2 27 20.77	15 40 58.43	15 449
63	9.3	46.7	48.8	50.5	52.7	54.8	a	29 20.52	305 18 " "	III B 43.120	2 28 41.60	15 46 50.07	15 454
64	8.9	29.4	31.5	33.7	36.0	38.2	c	29 33.76	303 58 10.0 8.4	V 46.210	2 28 54.74	17 2 43.17	17 494
65	9.1	11.2	13.4	15.5	17.6	19.6	c	31 15.46	304 40 10.0 8.5	III 45.850	2 30 36.49	16 20 46.94	16 466
66	9.3	53.8	55.9	58.0	0.2	2.5	c	31 58.08	304 0 10.0 8.0	III C 48.900	2 31 19.04	17 6 17.17	17 501
67	9.0	46.9	49.2	51.4	53.6	55.6	c	32 51.34	304 0 " "	III C 49.760	2 32 12.30	17 6 0.93	17 505
68	9.1	15.0	17.2	19.5	21.6	23.8	c	33 19.42	304 0 " "	III 53.420	2 32 40.39	16 58 24.57	17 506
69	8.9	46.0	48.2	50.3	52.0	53.9	e	33 20.39	305 30 10.0 7.9	VII 52.850	2 32 41.49	15 28 33.39	15 463
70	8.8	59.8	1.9	4.0	6.3	8.4	c	35 4.08	305 36 10.0 8.0	III 43.610	2 34 25.17	−15 25 28.38	−15 466
71	9.5	29.8	32.0	34.3	36.3	38.4	c	35 34.16	305 36 " "	III B 45.230	2 34 55.25	−15 28 11.10	−15 468
72	7.0	53.0	55.2	57.4	59.6	1.7	c	35 57.38	304 16 10.0 8.1	V 47.530	2 35 18.35	16 44 18.79	16 484
73	8.8	25.4	27.5	29.6	31.9	34.0	c	37 29.68	304 32 10.0 8.0	III 44.780	2 36 50.67	16 29 9.90	16 490
74	8.0	10.6	12.9	14.9	17.1	19.3	c	38 14.96	304 32 " "	III A 41.700	2 37 35.95	16 26 53.81	16 492
75	8.8	50.4	52.6	54.7	57.0	59.0	c	39 54.74	304 46 10.0 7.9	III A 42.700	2 39 15.74	16 12 34.43	16 495
76	9.4	27.3	29.6	31.8	34.0	36.0	c	40 31.74	304 12 10.0 7.7	III A 43.450	2 39 52.69	16 46 22.10	16 497
77	9.2	38.8	41.0	43.1	45.5	47.4	c	41 43.16	304 12 " "	III B 44.180	2 41 4.09	16 52 37.13	17 529
78	9.0	8.8	11.0	13.2	15.3	17.5	c	43 13.16	304 38 10.0 8.0	III 43.840	2 42 34.13	16 23 29.26	16 502
79	8.0	34.2	36.5	38.6	40.8	42.9	c	44 38.60	303 54 10.0 7.1	III C 44.890	2 43 59.48	17 13 38.55	17 540
80	9.0	16.4	18.6	20.6	22.9	25.0	c	45 20.70	303 54 " "	III C 42.690	2 44 41.58	−17 14 20.98	−17 542
81	9.1	30.7	32.7	35.0	37.2	41.7	c_2 d_1	45 32.87	303 54 " "	V A 39.050	2 44 53.77	−17 5 50.76	−17 545
82	8.9	17.6	19.5	21.3	23.3	25.6	a	46 51.29	305 12 10.0 7.0	III A 39.265	2 46 12.30	15 47 41.48	15 505
83	9.1	53.0	55.0	57.2	59.6	1.7	c	46 57.30	305 12 " "	V C 47.075	2 46 18.29	15 54 54.38	16 513
84	9.5	53.4	55.6	57.6	59.5	1.4	e	47 27.76	305 12 " "	V B 48.350	2 46 48.76	15 51 17.52	16 517
85	9.0	5.7	7.7	10.0	12.3	14.3	c	53 10.00	305 18 10.0 8.0	III 46.860	2 52 30.99	15 42 32.16	15 522
86	8.2	37.9	40.1	42.2	44.3	46.5	c	55 42.20	303 54 10.0 7.0	III 44.400	2 55 3.05	17 7 25.08	17 580
87	9.0	53.6	55.6	57.7	0.1	2.2	c	55 57.84	303 54 " "	V 49.530	2 55 18.69	17 5 48.05	17 582
88	7.8	25.4	27.6	29.8	32.0	34.0	c	58 29.76	305 20 10.0 7.4	III 48.520	2 57 50.74	15 40 2.11	15 532
89	7.7	28.0	30.2	32.4	34.6	36.8	c	1 32.40	304 2 10.0 8.4	III 43.350	3 0 53.24	16 59 45.92	17 597
90	8.7	23.0	25.3	27.4	29.6	31.8	c	2 27.42	304 22 10.0 7.9	III A 47.135	3 1 48.30	−16 35 17.31	−16 561
91	8.9	0.4	2.7	4.8	7.0	9.0	c	3 4.78	304 22 " "	III B 43.005	3 2 25.65	−16 43 5.46	−16 566
92	9.3	40.8	43.3	45.2	47.1	49.0	e	3 15.18	304 6 10.0 8.1	V A 39.240	3 2 36.03	16 53 51.39	17 602
93	9.3	51.5	53.8	55.8	58.1	0.3	c	4 55.90	304 36 10.0 8.0	III 47.930	3 4 16.79	16 24 17.40	16 572
94	8.5	14.4	16.6	18.8	21.0	23.2	c	5 18.80	304 36 " "	V 49.600	3 4 39.69	16 23 46.81	16 574
95	8.6	18.2	20.4	22.7	24.7	27.0	c	6 22.60	304 20 10.0 8.4	III 46.320	3 5 43.46	16 40 49.42	16 580
96	7.8	40.2	42.4	44.5	46.8	48.8	c	7 44.54	304 4 10.0 8.3	III 45.020	3 7 5.37	16 57 15.72	17 614
97	9.3	24.4	26.7	28.7	30.9	33.0	c	8 28.74	304 4 " "	III B 48.200	3 7 49.57	16 59 28.22	17 615
98	8.8	13.0	15.0	17.4	19.5	21.7	c	10 17.32	304 4 " "	III C 49.520	3 9 38.13	17 2 16.39	17 629
99	8.8	29.2	31.4	33.6	35.7	37.8	c	11 33.54	304 4 " "	III 50.540	3 10 54.36	16 55 30.99	17 630
100	8.9	10.5	12.6	14.9	17.0	19.0	c	13 14.80	304 20 10.0 8.3	III 46.060	3 12 35.64	−16 40 56.63	−16 605
101	8.8	52.0	54.0	56.2	58.4	0.5	c	13 56.22	305 8 10.0 7.4	III 47.270	3 13 17.14	−15 52 31.57	−16 610
102	7.5	45.0	47.4	49.5	51.6	53.8	c	14 49.46	305 8 " "	III B 49.750	3 14 10.36	15 54 57.54	16 614
103	9.1	38.7	40.8	43.0	45.3	47.4	c	16 43.04	304 24 10.0 7.7	III 47.835	3 16 3.87	16 36 23.79	16 617
104	8.6	23.7	25.9	28.0	30.5	32.5	c	17 28.12	304 52 10.0 7.5	III 44.615	3 16 48.99	16 9 24.42	16 620
105	9.3	29.0	31.0	33.3	35.4	37.4	c	18 33.22	304 40 10.0 8.0	III 48.670	3 17 54.07	16 20 7.33	16 625
106	8.6	26.9	29.0	31.2	33.5	35.6	c	19 31.24	304 24 10.0 8.9	III 43.830	3 18 52.06	16 37 40.95	16 628
107	7.3	19.8	22.0	24.0	26.3	28.5	c	20 24.12	305 0 10.0 9.0	III 48.110	3 19 45.00	16 0 17.11	16 630
108	9.2	1.9	3.8	5.7	7.6	9.9	a	22 35.66	305 0 " "	I C 45.555	3 21 56.52	16 7 31.71	16 635
109	8.9	32.8	35.0	37.1	39.3	41.5	c	22 37.14	304 26 10.7 9.1	III 48.910	3 21 57.96	16 34 3.90	16 638
110	8.9	37.5	39.6	41.7	44.0	46.0	c	24 41.76	304 26 " "	III A 44.740	3 24 2.58	−16 32 9.23	−16 642
111	8.8	28.7	30.9	33.0	35.2	37.4	c	26 33.04	304 50 10.0 8.2	III 43.735	3 25 53.89	−16 11 44.05	−16 648
112	9.1	7.9	10.0	12.1	14.4	16.5	c	27 12.18	304 0 10.0 8.3	III A 47.480	3 26 32.95	16 57 19.61	17 684
113	6.5	24.5	26.8	28.8	31.3	33.4	c	27 28.96	304 0 " "	V C 46.930	3 26 49.72	17 7 13.08	17 685
114	7.0	43.0	45.2	47.4	49.7	51.8	c	33 47.42	305 12 10.0 8.0	III 46.850	3 33 8.30	15 48 45.59	15 627
115	8.8	23.4	25.5	27.4	29.2	31.6	a	35 57.36	304 24 10.0 8.4	I B 45.310	3 35 18.14	16 40 30.00	16 680
116	9.0	59.8	2.0	4.3	6.5	8.7	c	36 4.26	304 24 " "	III 43.725	3 35 25.04	16 37 48.70	16 681
117	9.3	2.4	4.6	6.7	8.7	13.1	c_2 d_1	37 4.52	304 24 " "	V 44.325	3 36 25.30	16 37 38.86	16 686
118	8.6	26.0	28.2	30.4	32.5	34.6	c	37 30.34	304 24 " "	V 42.840	3 36 51.12	16 38 7.51	16 687
119	8.7	52.9	55.0	57.1	59.4	1.5	c	39 57.18	304 16 10.0 7.6	III 44.360	3 39 17.94	16 45 38.68	16 692
120	8.0	42.5	44.7	46.5	48.4	50.8	a	41 16.54	304 16 " "	I 51.120	3 40 37.30	−16 43 27.84	−16 696
121	9.1	18.0	20.0	22.1	24.5	26.5	c	41 22.22	304 16 " "	III B 46.530	3 40 42.97	−16 48 10.81	−16 697
122	9.0	10.4	12.5	14.7	16.9	19.1	c	44 14.72	304 2 10.0 7.5	III 45.380	3 43 35.46	16 59 21.39	17 732
123	9.2	1.6	3.6	5.5	7.5	9.9	a	45 35.61	304 2 " "	I A 43.700	3 44 56.35	16 56 36.97	17 735
124	8.0	41.9	44.0	45.8	47.7	50.0	a	46 15.90	304 2 " "	I C 48.700	3 45 36.63	17 4 43.23	17 738
125	8.1	13.6	15.7	18.0	20.0	22.3	c	46 17.92	304 2 " "	III A 44.440	3 45 38.66	−16 56 24.74	−17 739

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°	
126	8.4	31.1	34.5	36.6	38.7	40.9	c	46 36.56	304 2	10.0	7.5	V	45.270	3 45 57.30	−16 59 25.65	−17	742
127	8.2	3.9	6.2	8.3	10.4	12.6	c	47 8.28	305 28	10.0	7.1	V	48.790	3 46 29.17	15 32 13.84	15	678
128	7.8	34.4	36.5	38.6	40.8	43.0	c	48 38.66	304 58	10.0	8.0	III	48.210	3 47 59.49	16 2 25.30	16	717
129	9.1	46.9	49.1	51.3	53.5	55.6	c	50 51.28	304 36	10.0	7.7	III B	42.070	3 50 12.06	16 29 38.57	16	728
130	9.0	21.6	23.7	25.9	28.2	30.3	c	51 25.94	304 36	"	"	III	41.940	3 50 46.73	−16 26 27.96	−16	732
131	9.0	11.4	13.5	15.7	17.9	20.0	c	53 15.70	304 36	"	"	III A	42.590	3 52 36.49	−16 23 0.72	−16	741
132	9.1	9.1	11.2	13.4	15.5	17.7	c	54 13.38	304 36	"	"	III C	45.690	3 53 34.16	16 31 43.18	16	745
133	9.3	16.5	18.5	20.7	22.8	24.9	c	56 20.68	305 8	10.0	7.9	III	45.320	3 55 41.52	15 53 22.97	16	752
134	8.0	13.4	15.4	17.6	19.8	22.0	c	57 17.64	304 56	10.0	8.0	III B	45.590	3 56 38.45	16 8 32.03	16	755
135	9.1	29.5	31.8	33.8	36.1	38.3	c	57 33.90	304 56	"	"	V	42.970	3 56 54.72	16 6 10.43	16	757
136	8.2	42.4	44.4	46.7	48.8	51.0	c	59 46.66	305 2	10.0	8.0	III B	48.170	3 59 7.48	16 1 43.08	16	767
137	8.0	19.5	21.5	23.6	25.6	28.0	c	0 23.64	305 2	"	"	III	43.740	3 59 44.46	15 59 55.02	16	771
138	9.4	43.8	45.7	47.7	49.5	51.8	a	1 17.55	305 2	"	"	III	49.480	4 0 38.38	15 58 5.17	16	774
139	8.4	25.6	27.8	29.9	32.2	34.3	c	1 29.96	305 2	"	"	V	47.110	4 0 50.78	15 58 52.06	16	775
140	9.3	52.0	54.4	56.3	58.6	0.8	c	2 56.42	304 44	10.0	7.6	III C	47.460	4 2 17.20	−16 23 11.92	−16	781
141	7.4	30.0	32.3	34.3	36.3	38.0	e	3 4.38	304 44	"	"	V	51.740	4 2 25.18	−16 15 24.93	−16	782
142	7.3	4.4	6.6	8.7	10.8	13.0	c	5 8.70	304 50	10.0	8.0	III	52.120	4 4 29.51	16 9 16.51	16	791
143	8.0	18.2	20.4	22.5	24.7	26.8	c	6 22.52	304 50	"	"	III	53.570	4 5 43.33	16 8 49.10	16	799
144	9.2	49.9	52.2	54.4	56.6	58.8	c	6 54.38	304 50	"	"	III	47.900	4 6 15.18	16 10 38.12	16	804
145	6.5	27.2	29.3	31.6	33.8	35.9	c	7 31.56	304 50	"	"	III B	48.490	4 6 52.36	16 13 40.35	16	807
146	8.0	3.2	5.3	7.4	9.6	11.7	c	10 7.44	305 42	10.0	8.0	III A	42.610	4 9 28.34	15 17 2.68	15	745
147	9.3	52.2	54.4	56.7	58.8	0.8	c	10 56.58	305 42	"	"	III C	48.020	4 10 17.47	15 25 0.77	15	751
148	8.5	4.9	7.0	9.2	11.4	13.5	c	12 9.20	305 42	"	"	III	41.980	4 11 30.10	15 20 30.91	15	755
149	9.2	57.5	59.6	1.8	4.0	6.3	c	13 1.84	305 20	10.0	7.0	III A	41.500	4 12 22.71	15 39 26.67	15	759
150	9.2	27.9	30.0	32.2	34.4	36.7	c	14 32.24	305 20	"	"	III B	40.690	4 13 53.08	−15 46 10.98	−15	761
151	8.0	34.6	36.6	38.7	40.9	43.1	c	15 38.78	305 36	10.0	7.4	III	47.875	4 14 59.67	−15 24 39.62	−15	765
152	8.8	56.5	58.5	0.8	3.0	5.1	c	19 0.78	304 54	10.0	7.8	III A	39.610	4 18 21.59	16 6 6.11	16	845
153	8.3	12.9	15.0	17.2	19.4	21.6	c	20 17.22	304 44	10.0	7.8	III	49.330	4 19 38.01	16 16 15.95	16	849
154	9.1	17.6	19.8	21.9	24.3	26.4	c	21 22.00	304 54	9.5	7.6	III A	42.660	4 20 42.81	16 5 8.80	16	852
155	9.5	55.5	57.6	59.9	2.0	4.2	c	21 59.84	304 54	"	"	V A	39.870	4 21 20.66	16 6 4.07	16	855
156	8.9	23.1	25.2	27.3	29.7	31.7	c	22 27.40	304 54	"	"	V B	44.650	4 21 48.21	16 11 1.24	16	857
157	7.8	51.0	53.1	55.3	57.5	59.5	c	24 55.28	305 48	10.0	7.5	III	50.010	4 24 16.21	15 12 1.36	15	796
158	9.0	28.0	30.0	32.1	34.3	36.5	c	25 32.18	305 48	"	"	III B	50.720	4 24 53.10	15 15 1.25	15	798
159	9.4	33.0	35.1	37.2	39.4	41.7	c	26 37.28	305 48	"	"	III C	50.350	4 25 58.20	15 18 21.67	15	800
160	9.0	42.4	44.7	46.7	49.0	51.0	c	27 46.76	305 8	10.0	7.6	III A	42.670	4 27 7.62	−15 51 9.97	−15	804
161	8.0	0.8	2.8	5.0	7.2	9.3	c	29 5.02	305 8	"	"	III C	49.160	4 28 25.86	−15 58 47.51	−16	890
162	9.0	10.0	12.3	14.4	16.6	18.8	c	30 14.42	304 54	10.0	8.9	III	45.230	4 29 35.25	16 7 37.23	16	894
163	9.1	31.0	32.7	36.8	39.0	41.2	b_2 c_3	35 41.17	305 18	10.0	8.5	III	48.000	4 35 2.06	15 42 45.00	15	832
164	9.0	49.8	51.8	53.9	56.1	58.4	c	38 54.00	304 52	10.0	8.0	III A	46.470	4 38 14.84	16 6 1.79	16	926
165	9.5	49.4	51.7	53.7	55.8	57.6	e	39 23.86	304 52	"	"	VII A	40.315	4 38 44.70	16 8 2.95	16	929
166	9.5	25.9	28.0	30.1	32.3	34.4	c	39 30.14	304 52	"	"	III A	44.980	4 38 50.98	16 6 30.62	16	930
167	7.0	......	43.8	46.0	50.3	51.9	c_4 d_2	40 41.68	304 52	"	"	V B	(38).580	4 40 2.45	16 15 4.16	16	937
168	9.3	16.4	18.5	20.4	22.2	24.6	a	43 50.29	304 52	"	"	I A	41.740	4 43 11.14	16 7 32.73	16	951
169	9.1	55.2	57.5	59.6	1.8	4.0	c	43 59.62	304 52	"	"	III	46.510	4 43 20.46	−16 9 18.34	−16	952

Reduction Elements. Zone 150.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 28.4....	−0.078	+0.037	−0.382	−0.063	+0.057	−0.382
28.6....	−0.048	+0.077				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 1691		η Ceti		θ Ceti		ε Sculptoris		Lalande 8205		53 Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	300 50 9.05		310 18 9.25		312 18 9.40		295 28. 8.70		300 10 8.80		306 32 9.10	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq ...	46.670	6 9.65	44.115	5 21.23	46.475	6 6.02	46.005	5 57.00	42.450	4 50.13	43.950	5 17.75
II Red. to Mer.. ...	.675	0.20	.180	0.11	.490	0.09	.060	0.25	.560	0.21	.960	0.14
VI Inclination	.820		.320		.640		.150		.700		44.160	
VII Refraction. ...	.880	1 38.3	.330	1 9.4	.685	1 4.7	.190	2 3.2	.755	1 42.0	.150	1 20.3

	54 Eridani		60 Eridani	
	° ′ ″		° ′ ″	
CIRCLE READING.	301 10 8.50		304 38 8.95	
	r	′ ″	r	′ ″
I Microm. Eq. ..	45.510	5 47.29	46.110	5 59.31
II Red. to Mer	.520	0.20	.215	0.16
VI Inclination .	.640		.290	
VII Refraction...	.710	1 38.2	.275	1 26.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 1691......	0 54 26.48	11	−0.39	−48.76	300 54 40.6	16.0
43 H. Cephei.........	0 55 24.75	6	+3.39	[−48.71]	46 46	....
η Ceti..............	1 4 11.52	11	−0.32	−48.70	310 22 21.2	16.3
θ Ceti..............	1 19 39.58	11	−0.31	−48.73	312 23 10.8	16.0
ε Sculptoris........	1 41 36.96	11	−0.42	−48.70	295 32 2.8	17.5
Lalande 8205......	4 16 56.95	11	−0.39	−48.66	300 13 17.1	16.5
53 Eridani...........	4 34 15.02	11	−0.35	−48.72	306 36 6.7	17.4
54 Eridani	4 36 43.61	11	−0.38	−48.70	301 14 17.8	16.9
60 Eridani...........	4 46 20.26	7	−0.36	−48.61	304 42 42.3	18.1

h s
1.250.. ....*dt*.................... −48.722
Hourly rate........... + 0.0151

° ′ ″
Adopted Equator Point.........321 6 16.84

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
0 59	29.972	46.3	43.2
1 54	29.986	45.2	42.0
2 48	29.982	44.2	40.6
3 49	29.986	43.0	39.4
4 49	29.968	40.9	37.3

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0				*D* = Z. D. N. to 1895.0				*R*			
			303°	304°	305°	306°	303°	304°	305°	306°	303° 30′	304°	305°	306°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
303	−0.370	1 0	......	+10.696	+10.740	+10.784	.....	−24.16	−24.33	−24.48	89.04	87.40	84.20	81.17
304	0.364	1 30	+10.380	10.438	10.496	10.550	−25.06	25.18	25.29	25.41	89.19	87.54	84.33	81.30
305	0.357	2 0	10.146	10.216	10.285	10.352	25.80	25.88	25.96	26.03	89.33	87.68	84.47	81.43
306	−0.350	2 30	9.954	10.034	10.114	10.190	26.20	26.24	26.27	26.31	89.45	87.80	84.59	81.55
		3 0	+ 9.807	9.896	9.984	10.071	−26.27	26.27	26.26	26.25	89.62	87.96	84.74	81.70
		3 30	......	9.802	9.898	9.992	.....	25.95	25.90	25.86	89.74	88.08	84.86	81.81
		4 0	......	9.754	9.856	9.958	.....	25.30	25.21	25.12	89.89	88.23	85.00	81.94
		4 30	......	9.755	9.862	9.966	.....	24.32	24.19	24.06	90.05	88.39	85.15	82.09
		5 0	......	+ 9.803	+ 9.912	+ 10.020	.....	−23.03	−22.88	−22.71	90.22	88.55	85.31	82.24

1895 NOVEMBER 5. ZONE 151. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		*α* 1900.0	*δ* 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.8	37.7	39.9	42.0	44.1	46.2	c	5 41.98	304 26 29.6 1.7	III	45.680	21 5 3.26	−16 34 47.31	−16 5811
2	8.8	42.5	44.6	46.4	48.3	50.7	a	47 16.42	304 36 10.0 11.8	I	45.110	1 46 34.67	16 24 45.84	16 319
3	7.0	4.0	6.0	8.0	9.7	12.1	a	47 37.84	304 52 10.0 9.8	I	45.830	1 46 56.10	16 8 32.31	16 322
4	8.9	32.7	34.6	36.5	38.6	40.9	a	48 6.44	305 34 10.0 10.9	III	45.120	1 47 24.74	15 26 45.00	15 331
5	8.8	32.4	34.4	36.2	38.0	40.5	a	49 6.11	305 20 10.0 10.9	I	45.635	1 48 24.39	15 40 34.45	15 337
6	......	2.9	4.9	6.6	8.6	10.9	a	49 36.56	305 38 8.8 9.5	III(C)	48.340	1 48 54.86	15 28 10.83	15 339
7	9.1	57.2	58.7	3.0	5.1	7.4	$b_2 c_3$	50 7.30	305 38 " "	III A	49.550	1 49 25.60	15 18 6.15	15 342
8	9.1	38.0	40.0	42.3	44.2	46.0	e	50 12.31	304 48 10.0 10.7	VII	45.515	1 49 30.55	16 12 42.68	16 328
9	8.4	52.0	54.0	56.2	58.6	0.7	c	53 56.30	305 44 10.0 11.2	III	48.700	1 53 14.58	15 15 36.94	15 352
10	8.9	16.9	19.0	21.2	23.4	25.5	c	54 21.20	305 10 10.0 11.9	V B	43.590	1 53 39.43	−15 54 31.20	−16 341
11	9.1	29.7	31.9	34.0	36.3	38.3	c	55 34.04	305 10 " "	III	50.380	1 54 52.26	−15 49 6.33	−16 342
12	7.7	46.8	48.8	51.1	53.4	55.5	c	57 51.12	303 56 10.0 11.2	III	50.640	1 57 9.23	17 3 5.92	17 371
13	9.3	1.2	3.2	5.5	7.6	9.8	c	58 5.46	303 56 " "	V	50.950	1 57 23.57	17 3 1.36	17 373
14	5.	47.2	49.2	51.5	53.7	55.7	c	58 51.46	305 16 10.0 11.5	V B	47.570	1 58 9.66	15 47 15.73	16 356
15	9.2	11.9	14.0	18.3	19.9	22.5	$c_4 d_3$	59 9.71	305 16 " "	VI	47.620	1 58 27.91	15 44 1.96	15 360
16	8.0	48.8	50.8	53.0	55.3	57.4	c	0 53.06	304 52 10.0 10.7	III	43.450	2 0 11.22	16 9 22.03	16 365
17	9.5	23.0	25.3	27.5	29.6	31.8	c	1 27.44	304 52 " "	V A	47.060	2 0 45.61	16 4 59.00	16 366
18	9.1	1.3	3.6	5.6	7.5	9.3	e	1 35.66	304 52 " "	VII C	46.420	2 0 53.82	16 14 53.52	16 367
19	7.0	47.2	49.4	51.4	53.6	55.8	c	2 51.48	304 52 " "	V B	48.760	2 2 9.64	16 10 55.42	16 374
20	9.4	29.8	31.9	34.0	36.2	38.4	c	4 34.06	305 38 10.0 10.3	III B	42.580	2 3 52.26	−15 26 50.83	−15 373
21	7.0	35.8	37.8	39.9	42.2	44.2	c	5 39.98	305 38 " "	III	49.420	2 4 58.18	−15 21 26.54	−15 377
22	8.2	53.8	55.8	58.1	0.4	2.6	c	6 58.14	305 28 10.0 10.7	III	46.220	2 6 16.32	15 32 28.56	15 380
23	8.0	8.9	11.0	13.1	15.2	17.4	c	9 13.12	305 38 10.0 10.2	III	45.950	2 8 31.30	15 22 34.07	15 387
24	9.1	49.3	51.4	53.5	55.7	57.9	c	9 53.56	304 34 10.0 10.5	V	43.780	2 9 11.65	16 27 20.22	16 398
25	......	49.7	51.9	53.5	55.5	57.7	a	11 23.58	304 34 " "	I	46.170	2 10 41.66	16 26 31.81	16 407
26	......	5.5	7.8	9.7	11.6	13.6	e	11 39.81	304 34 " "	VII	42.180	2 10 57.88	16 27 52.50	16 408
27	8.6	49.6	51.8	54.0	56.2	58.3	c	17 53.98	305 38 10.0 10.2	III	45.340	2 17 12.10	15 22 47.91	−15 412

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°	
28	8.0	36.3	38.5	40.6	42.8	45.0	c	18 40.64	305	38	10.0	10.2	III	49.620	2 17 58.76	−15 21 25.97	−15	416
29	9.1	49.9	51.0	53.1	55.5	57.6	c	19 53.22	304	40	10.0	11.0	III	49.590	2 19 11.25	16 19 29.31	16	437
30	9.2	44.4	46.6	48.8	50.9	53.2	c	23 48.80	305	20	10.0	11.1	III	43.670	2 23 6.85	−15 41 21.92	−15	433
31	8.7	39.6	41.8	43.8	46.0	48.3	c	24 43.90	305	20	"	"	III B	43.020	2 24 1.94	−15 44 47.95	−15	437
32	9.0	13.6	15.8	18.0	20.2	22.4	c	26 18.00	304	24	10.0	10.7	III B	42.700	2 25 35.96	16 40 57.49	16	452
33	8.9	41.1	43.2	45.4	47.8	49.9	c	26 45.48	304	24	"	"	III	46.870	2 26 3.44	16 36 24.28	16	454
34	8.8	28.6	30.8	33.0	35.1	37.3	c	27 32.96	304	50	10.0	11.2	III	49.925	2 26 50.96	16 9 24.29	16	455
35	8.9	15.0	17.3	19.5	21.5	23.7	c	28 19.40	305	2	10.0	10.5	III	45.810	2 27 37.41	15 58 43.23	16	457
36	8.3	27.9	30.0	32.0	34.0	35.8	e	29 2.11	304	32	10.0	11.2	VII	45.710	2 28 20.08	16 28 48.98	16	460
37	8.2	26.5	28.7	30.7	32.7	34.5	e	30 0.78	304	32	"	"	V C	48.770	2 29 18.74	16 34 15.42	16	461
38	8.5	1.1	3.2	5.3	7.5	9.7	c	31 5.36	305	22	10.0	11.2	V	49.940	2 30 23.39	15 37 24.70	15	456
39	9.0	46.4	48.6	50.5	52.9	54.9	c	31 50.66	305	22	"	"	III B	49.740	2 31 8.67	15 40 40.72	15	459
40	8.5	36.3	38.4	40.6	42.8	44.9	c	32 40.60	305	22	"	"	III	47.375	2 31 58.61	−15 38 13.03	−15	462
41	8.9	27.7	29.9	32.0	34.4	36.6	c	33 32.12	304	28	10.0	10.8	III B	41.060	2 32 50.05	−16 37 30.67	−16	470
42	9.3	28.9	31.0	33.2	35.5	37.6	c	35 33.24	304	28	"	"	III B	42.220	2 34 51.16	16 37 8.95	16	480
43	8.0	55.8	58.0	0.2	2.5	4.4	c	36 0.18	304	28	"	"	III A	39.060	2 35 18.10	16 31 41.05	16	483
44	9.1	18.0	20.2	22.3	24.6	26.8	c	37 22.38	305	4	10.0	11.5	III A	39.580	2 36 40.35	15 55 29.27	16	489
45	9.3	44.8	47.0	49.2	51.5	53.5	c	39 49.20	305	48	10.0	11.0	III	50.010	2 39 7.22	15 11 23.17	15	486
46	9.4	……	28.4	……	32.2	34.0	e	42 0.49	305	20	10.0	10.9	III A	48.210	2 41 18.45	15 36 44.45	15	489
47	……	49.5	51.6	53.6	55.8	0.3	(c_2d_1)	42 51.59	305	20	"	"	V B	51.055	2 42 9.54	15 42 20.29	15	491
48	9.0	34.2	36.4	38.2	40.2	41.9	e	43 8.45	305	20	"	"	VII C	44.110	2 42 26.39	−15 47 47.19	−15	493

Reduction Elements. Zone 151.

1895.	OBSERVED.			ADOPTED.		
	c	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 5.3	−0.123	+0.032	−0.403	−0.120	+0.033	−0.403
5.5	−0.117	+0.034				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ν Aquarii		*ε* Capricorni		*λ* Capricorni		*θ* Ceti		48 Ceti		50 Ceti	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		309 13 59.90		301 6 1.00		309 10 5.85		312 18 10.00		298 52 9.85		305 6 10.55	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	45.680	5 49.40	45.680	5 51.12	47.985	6 35.17	46.405	6 5.21	45.865	5 54.38	45.060	5 39.06
II	Red. to Mer......	.730	0.12	.735	0.20	48.030	0.12	.430	0.09	.890	0.22	.095	0.16
VI	Inclination		1.68	.820		.185		.640		46.060		.240	
VII	Refraction		1 10.8	.940	1 35.9	.170	1 11.2	.640	1 4.0	.045	1 45.3	.270	1 22.7

		ε Sculptoris		*η* Eridani	
		° ′ ″		° ′ ″	
CIRCLE READING.		295 28 9.95		311 44 10.45	
		r	′ ″	r	′ ″
I	Microm. Eq......	45.700	5 51.98	41.950	4 39.38
II	Red. to Mer......	.765	0.25	42.020	0.09
VI	Inclination	.920		.095	
VII	Refraction	.975	2 1.7	.150	1 5.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ν Aquarii	21 4 47.83	8	−0.42	−51.77	309 18 40.3	19.1
ε Capricorni	.. ..	..	....	.....	301 10 16.4	18.9
λ Capricorni	21 41 48.48	11	−0.42	−51.71	309 15 29.9	17.9
θ Ceti	1 19 42.56	11	−0.40	−51.60	312 23 11.3	17.2
α Ursae Minoris	1 22 4.16	5	+9.64	[−51.61]	49 48	....
48 Ceti	1 25 30.18	11	−0.49	−51.60	298 56 19.1	17.5
50 Ceti	1 31 47.91	11	−0.45	−51.61	305 10 27.1	17.8
ε Sculptoris	1 41 40.08	11	−0.52	−51.71	295 32 0.5	16.8
η Eridani	2 52 14.05	11	−0.40	−51.69	311 47 44.6	17.8

h 21.390 .... *dt* .... −51.740 s

Hourly rate .... + 0.0227

Adopted Equator Point .... 321° 6′ 17.″88

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
20 48	30.242	57.9	56.3
21 27	30.238	56.3	54.6
1 20	30.235	53.5	52.5
2 7	30.225	53.0	52.3
3 0	30.212	52.9	52.0

Notes.

1. $A = +13.^{s}48$, $D = -7.''74$, $R = 84.''31$.

46, 48. Clouds.

α Ursae Minoris. Images somewhat unsteady.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			$D =$ Z. D. N. to 1895.0			R		
			304°	305°	306°	304°	305°	306°	304°	305°	306°
°	s	h m	s	s	s	″	″	″	″	″	″
304	−0.456	1 30	+10.434	+10.490	+10.545	−23.95	−24.11	−24.27	86.54	83.37	80.37
305	0.449	2 0	10.188	10.258	10.324	24.57	24.68	24.80	86.50	83.33	80.33
306	−0.442	2 30	9.982	10.060	10.138	24.87	24.95	25.02	86.52	83.35	80.35
		3 0	+ 9.817	+ 9.906	+ 9.992	−24.82	−24.86	−24.89	86.54	83.37	80.37

1895 NOVEMBER 10. ZONE 152. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°	
1	8.8	43.7	45.8	47.6	49.5	51.8	a	47 17.60	304	36	10.0	7.7	I	45.220	1 46 34.55	−16 24 44.17	−16	319
2	7.0	5.2	7.3	9.0	11.0	13.4	a	47 39.06	304	52	10.0	8.8	I	45.805	1 46 56.02	16 8 31.65	16	322
3	9.1	45.8	48.4	50.0	52.2	54.3	a	48 19.92	305	34	10.0	7.8	I	45.610	1 47 36.92	15 26 34.02	....	
4	8.8	33.6	35.8	37.8	39.6	41.9	a	49 7.55	305	20	10.0	8.4	III	45.800	1 48 24.52	15 40 32.42	15	337
5	8.5	4.6	6.5	8.2	9.9	12.5	a	49 38.12	305	38	10.0	7.0	II C	48.330	1 48 55.10	15 28 9.37	15	339
6	8.8	35.0	37.0	39.0	40.8	43.0	a	50 8.72	305	38	"	"	I A	49.420	1 49 25.71	15 18 5.94	15	342
7	8.3	9.4	11.5	13.8	15.9	18.0	c	50 13.72	304	48	10.0	8.1	III	45.440	1 49 30.65	16 12 41.31	16	328
8	9.1	41.8	44.0	46.0	47.9	49.9	e	50 16.12	304	48	"	"	V	46.360	1 49 33.05	16 12 25.02	16	329
9	8.0	53.3	55.6	57.6	59.8	2.0	c	53 57.66	305	44	10.5	8.9	III	48.730	1 53 14.62	15 15 35.64	15	352
10	8.4	18.2	20.5	22.5	24.7	26.9	c	54 22.56	305	10	10.0	8.9	V B	43.600	1 53 39.48	−15 54 30.89	−16	341
11	9.1	31.0	33.3	35.4	37.6	39.8	c	55 35.42	305	10	"	"	III A	40.280	1 54 52.34	−15 49 4.70	−16	342
12	......	18.4	20.5	22.4	24.4	26.5	a	57 52.45	303	56	10.0	8.4	I	(50).590	1 57 9.25	17 3 5.19	17	371
13	9.1	2.5	4.6	6.7	8.9	11.0	c	58 6.74	303	56	"	"	III	50.920	1 57 23.54	17 3 0.46	17	373
14	6.0	48.6	50.7	52.8	55.0	57.2	c	58 52.86	305	16	10.0	9.2	III B	47.520	1 58 9.75	15 47 14.72	16	356
15	9.3	6.7	9.0	11.0	13.4	15.3	c	59 11.08	305	16	"	"	V	47.640	1 58 27.97	15 44 0.56	15	360
16	9.2	57.5	59.6	1.6	3.5	5.6	e	59 31.73	304	32	10.0	8.4	V	49.490	1 58 48.57	16 27 27.74	16	359
17	8.0	50.1	52.2	54.4	56.5	58.7	c	0 54.38	304	52	9.0	7.5	III	43.560	2 0 11.23	16 9 20.46	16	365
18	.....	29.0	31.4	33.1	37.5	39.1	$c_3\ d_2$	1 28.97	304	52	"	"	V A	47.150	2 0 45.82	16 4 57.79	16	366
19	9.4	2.7	5.0	6.9	9.0	10.7	e	1 37.06	304	52	"	"	VII(C)	46.600	2 0 53.90	16 14 50.63	16	367
20	7.8	48.5	50.6	52.8	55.0	57.2	c	2 52.82	304	52	"	"	III B	48.830	2 2 9.67	−16 10 53.07	−16	374
21	9.2	31.2	33.0	35.4	37.4	39.6	c	4 35.32	305	38	10.0	9.2	III B	42.630	2 3 52.20	−15 26 48.84	−15	373
22	8.0	37.0	39.2	41.4	43.5	45.6	c	5 41.34	305	38	"	"	III	49.430	2 4 58.22	15 21 25.32	15	377
23	8.0	25.5	27.5	29.5	31.3	33.6	a	6 59.27	305	28	10.0	8.7	I	46.200	2 6 16.13	15 32 26.83	15	380
24	8.2	40.6	42.6	44.6	46.3	48.6	a	9 14.31	305	38	10.0	9.0	I A	45.860	2 8 31.17	15 22 33.28	15	387
25	8.6	20.9	22.9	24.8	26.7	29.0	a	9 54.79	304	34	10.0	9.3	I	43.600	2 9 11.56	16 27 19.83	16	398
26	8.9	44.9	47.0	48.8	50.7	53.0	a	11 18.82	304	34	"	"	I (C)	48.660	2 10 35.58	16 32 9.44	16	406
27	8.0	20.4	22.6	24.7	27.0	29.2	c	11 24.78	304	34	"	"	III	46.270	2 10 41.54	16 26 30.50	16	407
28	9.2	36.6	38.7	40.9	43.2	45.3	c	11 40.94	304	34	"	"	V	42.010	2 10 57.70	16 27 53.69	16	408
29	9.0	50.9	53.1	55.2	57.3	59.5	c	17 55.20	305	38	10.0	8.9	III	45.370	2 17 11.99	15 22 46.41	15	412
30	8.2	37.5	39.6	41.8	44.1	46.1	c	18 41.82	305	38	"	"	III	49.640	2 17 58.61	−15 21 24.65	−15	416
31	9.1	50.2	52.4	54.5	56.6	59.0	c	19 54.54	304	40	10.0	9.2	III	49.560	2 19 11.25	−16 19 29.26	−16	437
32	9.0	45.7	47.7	49.9	52.1	54.4	c	23 49.96	305	20	10.0	9.0	III	43.700	2 23 6.69	15 41 20.82	15	433
33	8.9	40.7	43.0	45.2	47.4	49.6	c	24 45.18	305	20	"	"	III B	43.030	2 24 1.90	15 44 47.22	15	437
34	8.8	15.0	17.0	19.3	21.5	23.7	c	26 19.30	304	24	10.0	9.3	III B	42.700	2 25 35.94	16 40 56.68	16	452
35	8.8	42.3	44.5	46.7	49.0	51.0	c	26 46.70	304	24	"	"	III	46.900	2 26 3.34	16 36 22.89	16	454
36	8.7	29.8	32.0	34.1	36.4	38.5	c	27 34.16	304	50	10.5	10.0	III	49.940	2 26 50.83	16 9 22.81	16	455
37	9.1	16.3	18.2	20.6	22.7	24.7	c	28 20.50	305	2	10.0	9.4	V	45.920	2 27 37.18	15 58 41.46	16	457
38	8.0	59.0	1.1	3.3	5.5	7.8	c	29 3.34	304	32	10.0	9.7	III	45.720	2 28 19.98	16 28 45.54	16	460
39	8.6	57.6	59.8	1.9	4.0	6.2	c	30 1.90	304	32	"	"	III (C)	48.780	2 29 18.52	16 34 13.29	16	461
40	8.9	2.5	4.5	6.6	8.8	10.9	c	31 6.66	305	22	10.0	9.2	III	49.910	2 30 23.35	−15 37 23.38	−15	456
41	8.8	47.6	49.7	51.8	54.0	56.2	c	31 51.86	305	22	"	"	III B	49.840	2 31 8.54	−15 40 38.23	−15	459
42	8.0	37.5	39.6	41.9	44.0	46.2	c	32 41.84	305	22	"	"	III	47.490	2 31 58.52	15 38 10.26	15	462
43	8.7	29.0	31.2	33.3	35.4	37.7	c	33 33.32	304	28	10.0	9.3	III B	41.120	2 32 49.92	16 37 28.76	16	470
44	9.2	30.4	32.4	34.4	36.7	38.7	c	35 34.52	304	28	"	"	III B	42.295	2 34 51.12	16 37 6.74	16	480
45	7.8	57.0	59.3	1.2	3.6	5.7	c	36 1.36	304	28	"	"	III	49.290	2 35 17.96	16 31 39.34	16	483
46	9.0	19.4	21.5	23.5	25.8	27.8	c	37 23.60	305	4	10.4	9.9	III	49.810	2 36 40.24	15 55 27.37	16	489
47	9.4	46.2	48.2	50.3	52.5	54.8	c	39 50.40	305	48	10.0	10.2	III	49.940	2 39 7.08	15 11 23.44	15	486
48	9.0	57.2	59.4	1.5	3.7	6.0	c	42 1.56	305	20	10.0	9.6	III (A)	48.180	2 41 18.20	15 36 44.11	15	489
49	7.6	48.2	50.5	52.5	54.9	57.0	c	42 52.62	305	20	"	"	III	40.890	2 42 9.24	15 42 19.66	15	491
50	8.5	5.1	7.3	9.6	11.7	13.9	c	43 9.52	305	20	"	"	V C	44.070	2 42 26.14	−15 47 46.07	−15	493

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0′	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
51	8.7	17.7	19.9	21.9	24.3	26.4	c	45 22.04	304 28 10.0 9.6	III 43.760	2 44 38.58	−16 33 27.97	−16 509
52	8.6	39.0	41.2	43.4	45.6	47.7	c	46 43.38	304 28 " "	III 49.370	2 45 59.91	16 31 40.70	16 510
53	9.0	40.7	42.9	45.0	47.3	49.5	c	49 45.08	304 40 10.0 9.8	III C 44.630	2 49 1.60	16 27 38.02	16 525
54	9.1	27.0	29.0	31.1	32.9	35.4	a	51 0.98	304 40 " "	I A 42.170	2 50 17.51	16 18 42.29	16 530
55	8.1	6.1	8.3	10.5	12.7	14.9	c	51 10.50	304 40 " "	III C 46.190	2 50 27.02	16 27 8.52	16 531
56	8.4	53.0	55.0	57.2	59.5	1.7	c	51 57.28	304 40 " "	III C 44.110	2 51 13.79	16 27 48.66	16 532
57	8.5	3.1	5.3	7.4	9.5	11.7	c	55 7.40	305 34 10.0 9.7	III 47.140	2 54 23.98	15 26 22.51	15 525
58	8.9	3.6	5.7	7.9	10.1	12.3	c	56 7.92	304 32 10.0 9.1	V 48.880	2 55 24.41	16 27 54.25	16 543
59	9.0	56.6	58.7	0.8	3.0	5.2	c	2 0.86	305 44 10.0 9.6	V B 46.200	3 1 17.42	15 19 57.01	15 540
60	8.8	52.5	54.8	56.8	58.8	0.7	c	2 27.05	305 44 " "	V C 45.565	3 1 43.60	−15 23 21.85	−15 541
61	8.9	8.9	11.2	13.0	15.0	17.0	e	2 43.35	305 44 " "	VII 49.510	3 1 59.91	−15 15 41.36	−15 542
62	9.1	48.4	50.5	52.8	54.8	57.0	c	3 52.70	305 44 " "	V B 43.090	3 3 9.25	15 20 57.23	15 547
63	8.5	40.8	43.0	45.0	47.3	49.5	c	6 45.12	305 12 10.0 10.2	III 45.720	3 6 1.61	15 48 54.12	15 551
64	6.5	17.3	19.4	21.5	23.8	26.0	c	7 21.60	304 40 10.0 9.8	III B 45.760	3 6 38.04	16 24 8.70	16 587
65	8.4	16.3	18.5	20.8	22.9	25.0	c	8 20.70	304 40 " "	III C 49.910	3 7 37.14	16 26 2.26	16 590
66	8.6	37.6	39.6	41.8	44.1	46.3	c	8 41.88	304 40 " "	V 44.250	3 7 58.33	16 21 26.13	16 593
67	8.8	31.8	33.8	36.0	38.1	40.5	c	10 36.04	305 48 10.0 9.7	III 46.850	3 9 52.58	15 12 32.04	15 562
68	8.8	51.3	53.5	55.6	57.7	59.9	c	11 55.60	305 48 " "	III A 44.890	3 11 12.14	15 9 54.67	15 568
69	8.3	51.9	54.0	56.0	58.4	0.5	c	14 56.16	305 46 10.0 9.9	III 45.385	3 14 12.68	15 15 1.51	15 578
70	8.7	35.3	37.6	39.6	41.6	43.3	e	15 9.60	304 14 10.0 9.0	VII 49.630	3 14 25.98	−16 45 47.80	−16 615
71	8.0	24.4	26.6	28.8	31.0	33.1	c	19 28.78	305 46 10.0 10.0	III 48.490	3 18 45.28	−15 14 3.29	−15 589
72	9.0	9.5	11.6	13.7	15.8	18.1	c	20 13.74	305 36 10.0 9.8	V C 45.210	3 19 30.21	15 31 34.46	15 592
73	8.0	16.0	18.2	20.4	22.4	24.7	c	21 20.34	305 36 " "	III A 41.630	3 20 36.82	15 23 0.75	15 595
74	8.0	24.8	27.0	29.1	31.2	33.4	c	22 29.10	305 24 10.0 10.1	III C 47.720	3 21 45.55	15 42 46.30	15 598
75	9.1	33.8	35.8	38.0	40.1	42.3	c	23 38.00	305 24 " "	III A 46.540	3 22 54.46	15 33 27.70	15 601
76	8.8	55.3	57.4	59.4	1.9	3.9	c	26 59.58	305 6 10.0 9.6	III 48.340	3 26 15.99	15 54 10.81	16 650
77	9.2	55.2	57.4	59.6	1.7	3.8	c	27 59.54	305 6 " "	III C 45.920	3 27 15.94	16 1 23.80	16 652
78	8.4	44.5	46.9	48.7	50.7	52.6	e	29 18.94	305 6 " "	V 51.650	3 28 35.35	15 53 9.38	16 656
79	8.3	59.2	1.5	3.7	5.9	8.0	c	31 3.66	304 36 10.0 9.2	III 48.690	3 30 20.01	16 24 7.20	16 663
80	9.0	21.6	23.4	25.8	28.0	30.3	c	34 25.82	304 52 10.0 10.4	III A 41.650	3 33 42.19	−16 7 6.56	−16 674
81	9.3	12.3	14.4	18.9	21.0	25.3	c₁ d₁	35 16.66	304 52 " "	V C 47.250	3 34 33.01	−16 15 2.15	−16 678
82	8.9	58.9	1.2	3.0	5.2	7.0	e	35 33.29	304 52 " "	VII A 48.650	3 34 49.66	16 4 55.39	16 679
83	8.1	17.0	19.2	21.4	23.6	25.6	c	38 21.36	304 44 10.0 10.0	III 46.250	3 37 37.70	16 16 55.60	16 688
84	......	33.8	36.1	38.2	40.3	42.5	c	41 38.18	305 26 10.0 10.3	III C 47.010	3 40 54.58	15 41 5.98	15 649
85	8.6	34.0	36.2	38.4	40.6	42.7	c	42 38.38	305 26 " "	V A 40.340	3 41 54.79	15 33 34.22	15 654
86	......	17.5	19.8	22.0	24.2	26.3	c	43 21.96	305 26 " "	V B 44.770	3 42 38.36	15 38 38.16	15 657
87	9.0	21.2	23.2	25.5	27.7	29.9	c	44 25.50	304 46 10.6 10.7	V 47.510	3 43 41.83	−16 14 34.02	−16 705

Reduction Elements. Zone 152.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
November 10.5....	−0.031	+0.084	−0.188	−0.031	+0.084	−0.188

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		θ Ceti		48 Ceti		50 Ceti		ε Sculptoris		δ Eridani		30 Eridani	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	312 18 9.70		298 52 8.95		305 6 9.80		295 28 8.85		310 54 10.65		315 22 10.20	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	46.510*	6 3.27	45.770	5 53.36	45.010	5 38.46	45.750	5 52.21		6 31.27	42.880	4 57.17
II	Red. to Mer......	.520*	0.09	.825	0.22	.075	0.16	.820	0.25		0.10	.910	0.06
VI	Inclination	.370*		46.000		.200		.900		47.885	−1.68	43.010	
VII	Refraction.......	.310*	1 5.4	.055	1 47.6	.250	1 24.6	.940	2 4.5	.890	1 8.9	.125	59.0

		γ Eridani	
		° ′ ″	
	CIRCLE READING.	307 14 9.80	
		r	′ ″
I	Microm. Eq......	44.110	5 21.10
II	Red. to Mer......	.195	0.14
VI	Inclination	.300	
VII	Refraction.......	.310	1 18.6

* Probably recorded in the reverse order.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ϑ Ceti	1 19 43.84	11	−0.12	−53.16	312 23 7.7	14.1
α Ursae Minoris	1 22 6.05	5	+7.69	[−53.23]	49 48	....
48 Ceti	1 25 31.52	11	−0.17	−53.25	298 56 14.9	14.0
50 Ceti	1 31 49.19	11	−0.14	−53.19	305 10 23.8	15.1
ε Sculptoris	1 41 41.37	11	−0.18	−53.34	295 31 56.8	14.0
δ Eridani	3 39 10.48	11	−0.12	−53.20	310 59 31.4	15.5
30 Eridani	3 48 27.87	11	−0.10	−53.20	315 26 8.4	15.3
γ Eridani	3 54 5.17	11	−0.13	−53.18	307 18 12.4	16.1

h 1.495 .... *dt* .... s −53.235

Hourly rate ....+ 0.0183

Adopted Equator Point .... 321° 6′ 14.87″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
1 17	29.952	40.2	37.4
2 6	29.956	38.9	36.5
3 4	29.956	37.5	35.4
3 54	29.952	37.4	35.5

Notes.

9. Images rather unsteady.
31. Seeing improving.
58. Clouds after this.
69, 86. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0			$D=$ Z. D. N. to 1895.0			R		
			304°	305°	306°	304°	305°	306°	304°	305°	306°
°	s	h m	s	s	s	″	″	″	″	″	″
304	−0.146	1 30	+10.420	+10.476	+10.531	−23.36	−23.55	−23.73	88.47	85.23	82.17
305	0.142	2 0	10.160	10.229	10.295	23.93	24.09	24.23	88.61	85.37	82.30
306	−0.139	2 30	9.939	10.018	10.094	24.20	24.30	24.41	88.72	85.47	82.40
		3 0	9.760	9.848	9.935	24.13	24.19	24.25	88.80	85.55	82.47
		3 30	9.629	9.723	9.818	23.74	23.76	23.78	88.78	85.53	82.45
		4 0	+ 9.543	+ 9.643	+ 9.744	−23.03	−23.00	−22.97	88.76	85.51	82.43

1895 NOVEMBER 12. ZONE 153. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.0	15.6	17.7	19.8	22.0	24.0	c	59 19.82	305 32 10.0 10.4	III	48.030	2 59 35.76	−15 28 9.79	−15 537
2	9.0	16.6	18.7	20.7	23.0	25.0	c	12 20.80	304 36 10.0 10.3	III	43.110	3 12 36.58	16 25 51.11	16 606
3	8.6	46.5	48.7	50.8	53.2	55.3	c	29 50.90	304 26 10.0 10.7	III	48.630	3 30 6.59	16 34 11.08	16 662
4	9.0	38.5	40.5	42.6	44.8	47.0	c	35 42.68	304 40 10.0 10.6	III	47.330	3 35 58.37	16 20 37.29	16 683
5	8.6	57.4	59.4	1.6	3.8	5.9	c	38 1.62	304 40 " "	III B	48.060	3 38 17.30	16 23 37.34	16 689
6	8.9	30.3	32.4	34.6	36.8	38.9	c	39 34.60	304 40 " "	III	43.900	3 39 50.28	16 21 44.41	16 694
7	8.5	3.4	5.7	7.8	10.0	12.2	c	41 7.82	303 58 10.0 10.8	III	43.860	3 41 23.43	17 3 47.86	17 724
8	8.6	40.9	43.0	45.3	47.4	49.5	c	45 45.22	305 46 10.0 10.6	III	49.800	3 46 0.99	15 13 49.82	15 676
9	8.8	59.5	1.7	3.7	6.0	8.0	c	46 3.78	304 32 10.0 10.0	V	46.620	3 46 19.43	16 28 56.44	16 711
10	8.5	48.7	50.7	52.8	55.1	57.2	c	49 52.90	304 18 10.0 10.0	III	43.415	3 50 8.51	−16 43 58.70	−16 727
11	9.0	22.1	24.4	26.5	28.7	30.9	c	50 26.52	304 18 " "	III	48.100	3 50 42.13	−16 42 28.95	−16 729
12	8.7	43.0	45.2	47.3	49.5	51.7	c	50 47.34	304 18 " "	V B	43.950	3 51 2.94	16 47 3.58	16 733
13	8.6	2.6	4.7	7.0	9.2	11.2	c	57 6.94	304 40 10.0 10.0	III	48.600	3 57 22.57	16 20 20.47	16 760
14	8.2	49.9	52.0	54.1	56.5	58.6	c	57 54.22	304 40 " "	V C	45.140	3 58 9.84	16 27 54.55	16 765
15	6.5	15.8	17.8	20.0	22.2	24.3	c	59 20.02	304 10 10.0 10.0	III	44.530	3 59 35.59	16 51 41.00	16 770
16	8.8	26.3	28.4	30.6	32.9	35.0	c	2 30.64	304 2 10.0 9.9	III C	47.300	4 2 46.19	17 5 15.67	17 793
17	9.0	23.2	25.6	27.8	30.0	32.0	c	3 27.72	304 2 " "	III A	42.670	4 3 43.28	16 57 3.24	17 797
18	9.4	15.0	16.8	19.6	21.6	23.9	c	4 19.48	304 2 " "	III B	43.420	4 4 35.03	17 3 17.85	17 803
19	8.3	16.9	19.2	21.4	23.5	25.6	c	5 21.32	305 18 10.0 9.7	III	47.140	4 5 37.00	15 42 49.51	15 731
20	8.7	6.8	8.8	10.9	13.3	15.5	c	6 11.06	304 42 10.0 10.0	V C	41.130	4 6 26.66	−16 27 14.31	−16 806
21	7.0	10.7	12.7	15.0	17.1	19.2	c	9 14.94	304 42 " "	III A	49.720	4 9 30.56	−16 14 47.73	−16 814
22	7.7	8.0	10.0	12.4	14.5	16.7	c	10 12.32	304 42 " "	III C	45.465	4 10 27.91	16 25 51.37	16 817
23	8.5	20.4	22.2	24.6	26.8	28.9	c	10 24.58	304 42 " "	V C	42.460	4 10 40.16	16 26 50.29	16 819
24	8.8	0.3	2.4	4.5	6.7	8.8	c	12 4.54	304 42 " "	III	42.200	4 12 20.13	16 20 28.49	16 826
25	8.1	17.4	19.5	21.7	24.0	26.0	c	13 21.72	304 24 10.0 9.9	III	44.200	4 13 37.28	16 37 51.59	16 830
26	8.2	22.5	24.7	26.7	28.9	31.0	c	14 26.76	304 24 " "	III A	42.100	4 14 42.33	16 35 16.89	16 832
27	7.6	17.6	19.7	21.8	24.0	26.2	c	15 21.86	304 24 " "	III B	45.680	4 15 37.42	16 40 37.19	16 838
28	9.2	49.9	52.0	54.2	56.4	58.6	c	15 54.22	304 24 " "	III A	40.660	4 16 9.78	16 35 45.04	16 840
29	9.4	32.6	34.9	37.0	39.1	41.6	c	16 37.04	305 16 10.0 10.1	III A	43.740	4 16 52.70	15 42 43.28	15 768
30	8.0	6.7	8.8	11.0	13.2	15.4	c	17 11.02	305 16 " "	III B	47.770	4 17 26.66	−15 47 54.83	−15 771
31	9.4	14.7	17.1	19.2	21.4	23.5	c	18 19.18	305 16 " "	III A	46.620	4 18 34.83	−15 41 48.61	−15 774
32	7.7	57.0	59.0	1.2	3.4	5.6	c	21 1.24	305 16 " "	III C	41.220	4 21 16.87	15 53 14.85	15 786
33	8.6	46.1	48.3	50.6	52.6	54.8	c	21 50.48	305 16 " "	III	41.800	4 22 6.12	15 46 37.79	15 787
34	8.9	1.9	4.0	6.2	8.5	10.6	c	22 6.24	305 16 " "	V A	47.130	4 22 21.89	15 41 41.68	15 788
35	8.7	44.0	46.0	48.3	50.4	52.5	c	24 48.24	304 56 10.0 9.9	III B	43.425	4 25 3.84	−16 9 22.14	−16 870

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
36	8.5	45.7	47.8	49.9	52.2	54.2	c	25 49.96	304 56 10.0 9.9	III 42.090	4 26 5.56	−16 6 34.83	−16 876
37	9.2	2.4	4.5	6.6	9.0	10.9	c	26 6.68	304 56 “ “	V B 45.180	4 26 22.28	16 8 50.48	16 880
38	8.6	9.9	12.1	14.2	16.5	18.7	c	27 14.28	304 56 “ “	III B 40.320	4 27 29.88	16 10 22.63	16 886
39	8.0	24.5	26.6	28.8	31.0	33.0	c	32 28.78	305 8 10.0 9.7	III 43.860	4 32 44.40	15 54 2.75	15 824
40	8.2	38.8	40.8	42.6	44.3	46.8	a	34 12.39	305 52 10.0 10.5	I 48.120	4 34 28.09	−15 8 37.42	−15 828
41	9.3	19.1	21.4	23.5	25.7	27.8	c	34 23.50	304 50 10.0 9.3	III B 41.710	4 34 39.08	−16 15 59.20	−16 912
42	8.0	32.4	34.4	36.7	39.0	41.0	c	34 36.70	304 50 “ “	V 48.240	4 34 52.29	16 10 41.97	16 913
43	9.3	44.3	46.4	48.6	50.7	52.8	c	35 48.56	304 50 “ “	V B 43.420	4 36 4.14	16 15 28.44	16 921
44	8.7	31.8	33.8	36.0	38.3	40.4	c	37 36.06	305 18 10.0 9.3	III A 41.750	4 37 51.71	15 41 29.41	15 843
45	7.7	18.2	20.3	22.4	24.6	28.7	c	38 22.44	305 18 “ “	III B 40.100	4 38 38.07	15 48 30.04	15 848
46	9.2	16.5	18.7	20.8	22.9	25.2	c	39 20.82	304 44 10.0 9.7	III A 43.700	4 39 36.40	16 14 54.22	16 933
47	8.1	11.1	13.3	15.5	17.6	19.8	c	42 15.46	304 44 “ “	III B 45.870	4 42 31.04	16 20 42.37	16 947
48	7.8	48.7	50.8	52.8	55.1	57.4	c	43 52.96	304 44 “ “	III (B) 46.390	4 44 8.54	16 20 32.99	16 958
49	9.4	39.6	41.5	43.5	45.4	47.7	a	45 13.43	304 44 “ “	I A 40.890	4 45 29.02	16 15 48.63	16 961
50	5.	21.2	23.4	25.5	27.7	29.9	c	45 25.54	304 44 “ “	III C 47.410	4 45 41.11	−16 23 26.91	−16 964
51	8.8	51.0	53.2	55.4	59.7	1.3	$c_3 d_2$	45 51.06	304 32 10.0 10.0	V 47.910	4 46 6.62	−16 28 53.08	−16 969
52	9.5	55.4	57.4	59.6	1.8	4.0	c	46 59.64	304 32 “ “	III 46.800	4 47 15.20	16 29 13.48	16 973
53	9.1	26.0	28.1	30.3	32.2	33.9	e	47 0.26	304 32 “ “	VII B 42.600	4 47 15.81	16 33 50.26	16 975
54	9.3	22.1	24.3	26.5	28.7	30.8	c	49 26.48	304 50 10.0 9.8	III 47.750	4 49 42.08	16 10 55.26	16 986
55	8.6	37.2	39.4	41.5	43.7	45.8	c	49 41.52	304 50 “ “	V B 49.400	4 49 57.11	16 13 38.56	16 988
56	8.6	37.6	39.7	41.9	44.0	46.1	c	50 41.86	304 58 9.6 8.8	VI 48.520	4 50 57.47	16 2 43.17	16 993
57	8.6	22.3	24.4	28.8	30.5	33.1	$c_4 d_3$	51 20.21	304 58 “ “	VI 45.730	4 51 35.82	16 3 36.94	16 996
58	9.4	33.9	36.2	38.4	40.6	42.8	c	52 38.38	304 58 “ “	III A 43.540	4 52 53.99	16 1 2.14	16 1000
59	9.1	51.1	53.7	57.8	59.3	2.0	$c_4 d_3$	52 49.16	304 58 “ “	VI C 48.460	4 53 4.76	16 9 11.07	16 1003
60	9.0	54.6	56.4	58.7	0.9	3.0	c	54 58.72	305 46 10.0 10.0	III 45.540	4 55 14.42	−15 15 36.71	−15 916
61	7.8	23.2	25.5	27.4	29.7	31.9	c	55 27.54	304 58 10.0 9.7	III 47.070	4 55 43.16	−16 3 10.19	−16 1022
62	8.7	40.8	42.9	45.0	47.4	49.4	c	57 45.10	305 10 10.0 10.3	III 47.390	4 58 0.74	15 51 3.97	15 927
63	8.0	52.8	54.8	57.0	59.2	1.3	c	58 57.02	305 10 “ “	III 48.160	4 59 12.66	15 50 49.64	15 931
64	9.3	38.8	40.9	43.1	45.4	47.5	c	0 43.14	305 4 10.0 9.8	III B 44.650	5 0 58.76	16 1 11.53	16 1038
65	8.9	31.3	32.9	37.4	39.4	41.5	$b_2 c_3$	1 41.54	305 4 “ “	III 46.155	5 1 57.17	15 57 29.70	16 1042
66	9.1	46.6	48.6	50.7	53.0	55.1	c	1 50.80	305 4 “ “	V A 44.110	5 2 6.44	15 54 55.11	15 947
67	9.0	11.1	13.2	15.4	17.7	19.8	c	4 15.44	304 56 10.0 10.2	III B 45.800	5 4 31.06	16 8 51.00	16 1053
68	8.6	11.0	13.0	15.2	17.5	19.4	c	5 15.22	304 56 “ “	III 44.400	5 5 30.84	16 6 4.94	16 1057
69	8.7	37.5	39.0	43.5	45.5	47.7	$b_2 c_3$	5 47.68	304 56 “ “	III 42.405	5 6 3.30	16 6 43.45	16 1060
70	8.9	55.2	57.5	59.7	1.9	6.2	$c_2 d_1$	5 57.52	304 56 “ “	V 48.995	5 6 13.15	−16 4 38.37	−16 1062
71	9.1	10.0	12.2	14.1	18.1	20.2	$c_3 d_2$	7 10.00	305 6 10.0 9.8	V C 50.960	5 7 25.64	−16 0 26.81	−16 1066
72	8.2	12.6	14.7	17.1	19.2	21.4	c	8 17.00	305 6 “ “	III B 45.830	5 8 32.63	15 58 51.62	16 1073
73	7.8	28.4	30.7	32.8	35.0	37.1	c	9 32.80	305 6 “ “	III 44.300	5 9 48.44	15 56 8.16	15 978
74	9.0	2.1	4.3	6.4	8.8	10.8	c	10 6.48	305 6 “ “	III 49.170	5 10 22.12	15 54 34.90	15 981
75	9.3	22.2	24.3	26.6	28.8	31.0	c	10 26.58	305 6 “ “	V B 47.190	5 10 42.21	15 58 27.88	16 1082
76	9.0	55.1	57.4	59.4	1.3	3.1	e	10 29.50	305 6 “ “	VII B 42.195	5 10 45.13	16 0 5.09	16 1083
77	9.2	15.6	17.7	19.8	21.8	23.6	e	10 49.95	305 6 “ “	VII 41.840	5 11 5.59	15 56 58.33	16 1086
78	9.0	36.5	38.6	40.5	42.3	44.7	a	17 10.31	305 28 10.0 9.5	I 44.730	5 17 26.00	15 34 0.19	15 1020
79	9.1	55.7	58.3	0.3	4.5	6.0	$c_3 d_2$	16 55.91	304 46 10.0 9.7	V 47.980	5 17 11.52	16 15 2.79	16 1114
80	9.3	3.0	5.0	7.2	9.5	11.7	c	18 7.28	304 46 “ “	V B 44.640	5 18 22.89	−16 19 20.86	−16 1120
81	8.9	3.0	5.3	7.5	9.7	11.8	c	19 7.46	304 46 “ “	III C 46.520	5 19 23.07	−16 21 56.52	−16 1126
82	8.8	24.1	26.1	28.0	29.8	32.0	a	21 57.79	305 24 10.0 10.5	I 49.530	5 22 13.48	15 36 29.60	15 1039
83	8.0	53.5	55.7	57.8	0.0	2.3	c	21 57.86	305 10 10.0 10.0	III 48.240	5 22 13.53	15 50 56.89	15 1040
84	9.0	46.4	48.5	50.6	53.0	54.9	c	22 50.68	305 10 “ “	III 48.780	5 23 6.35	15 50 46.87	15 1048
85	8.0	2.3	4.4	6.6	8.8	10.9	c	26 6.60	305 10 “ “	III 42.550	5 26 22.28	15 52 47.65	15 1063
86	8.0	45.1	47.2	49.4	51.7	53.7	c	34 49.42	305 6 10.0 9.9	III 47.090	5 35 5.12	15 55 24.07	15 1110
87	8.0	26.6	28.7	30.9	33.0	35.1	c	35 30.86	304 38 10.0 10.5	III C 47.760	5 35 46.50	16 29 38.98	16 1199
88	8.9	17.7	19.7	21.7	23.4	26.0	a	36 51.63	304 38 “ “	I C 50.260	5 37 7.27	16 28 50.13	16 1205
89	9.0	47.4	49.6	51.7	54.0	56.0	c	36 51.74	304 38 “ “	III 51.900	5 37 7.39	16 21 53.79	16 1206
90	7.0	19.5	21.5	23.6	25.8	28.0	c	42 23.68	304 50 10.5 10.7	III B 41.560	5 42 39.36	−16 16 26.60	−16 1244
91	9.2	29.6	31.7	34.1	36.3	38.4	c	42 34.02	304 50 “ “	V A 45.630	5 42 49.72	−16 8 41.33	−16 1248
92	9.2	48.0	50.1	52.2	54.3	56.4	c	47 52.20	305 56 10.0 9.6	III B 41.450	5 48 8.02	15 10 27.99	15 1201
93	9.1	4.2	6.4	8.5	10.7	12.8	c	48 8.52	305 56 “ “	V 45.770	5 48 24.35	15 5 53.21	15 1203
94	7.8	33.8	36.0	38.3	40.4	42.6	c	49 38.22	305 18 10.0 10.2	III 42.150	5 49 53.98	15 45 4.66	15 1212
95	9.2	55.3	57.6	59.6	1.9	4.0	c	52 59.68	305 16 11.9 12.0	III A 38.070	5 53 15.46	15 45 6.08	15 1227
96	9.0	11.0	13.2	17.5	19.1	21.7	$c_4 d_3$	53 8.90	305 16 “ “	VI A 41.690	5 53 24.68	15 43 58.85	15 1229
97	6.0	11.5	13.5	15.7	17.8	19.9	c	0 15.68	304 34 10.0 9.3	III 43.795	6 0 31.41	16 28 39.02	16 1349
98	9.2	57.7	59.8	1.9	4.1	6.4	c	1 1.98	304 34 “ “	III B 45.580	6 1 17.71	16 31 18.33	16 1352
99	7.0	45.2	46.5	50.8	52.9	55.0	$b_2 c_3$	1 55.13	304 34 “ “	III B 48.470	6 2 10.86	16 30 23.18	16 1357
100	8.9	56.5	58.8	1.0	5.2	6.8	$c_3 d_2$	1 56.60	304 34 “ “	V 51.480	6 2 12.34	−16 26 13.42	−16 1358

Reduction Elements. Zone 153.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 12.4....	−0.021	+0.115	−0.014	−0.014	+0.126	−0.047
12.6....	−0.007	+0.138	−0.080			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	τ^3 Eridani		ζ Eridani		τ^4 Eridani		Lalande 6476		α Leporis		γ Leporis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	297 0 10.55		311 50 10.20		298 54 10.40		308 0 10.00		303 8 9.75		298 34 9.80	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq.	47.010	6 16.44	43.230	5 4.04	45.860	5 54.52	44.870	5 35.88	46.500	6 7.13		5 18.58
II | Red. to Mer.	.060	0.24	.265	0.09	.920	0.22	.950	0.13	.590	0.18	44.010	0.19
VI | Inclination	.130		.425		46.030		45.060		.695		.140	−0.67
VII | Refraction	.260	1 57.0	.435	1 6.9	.080	1 48.1	.120	1 16.6	.735	1 31.7	.145	1 49.8

	δ Leporis		η Leporis		5 Monocerotis	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	300 10 9.70		306 52 9.95		314 48 10.10	
	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq.	42.590	4 50.75	41.530	4 30.98	42.430	4 47.62
II | Red. to Mer.	.630	0.18	.590	0.14	.400	0.05
VI | Inclination	.720	0.67	.650		.620	0.67
VII | Refraction		1 42.9	.695	1 20.0		1 0.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
47 H. Cephei	2 52 13.60	11	+0.59	[+5.87]	40 4	....
τ^3 Eridani	2 57 43.80	11	0.00	+6.05	297 4 30.2	17.9
ζ Eridani	3 10 42.11	11	+0.04	+5.97	311 54 7.4	19.0
τ^4 Eridani	3 14 48.85	11	+0.01	+6.01	298 58 17.0	18.4
Lalande 6476	3 24 36.49	11	+0.03	+6.03	308 4 29.4	17.7
α Leporis	5 28 3.69	11	+0.02	+5.99	303 12 45.4	18.2
γ Leporis	5 40 2.77	11	0.00	+6.01	298 37 38.1	17.8
δ Leporis	5 46 46.07	11	+0.01	+5.91	300 13 18.4	18.1
η Leporis	5 51 35.09	11	+0.02	+5.96	306 55 21.1	17.6
δ Ursae Minoris S. P.	6 5 29.87	5	−1.65	[+5.56]	54 26	....
5 Monocerotis	6 9 41.77	11	+0.04	+6.07	314 51 58.0	18.3

h 3.200 . . . . *dt* . . . . s +6.015

Hourly rate . . . . −0.0104

Adopted Equator Point . . . . ° ′ ″ 321 6 18.11

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
2 55	30.004	36.4	35.3
4 0	29.995	36.5	35.3
5 0	29.990	36.0	34.7
6 10	29.994	35.5	34.2

Notes.

Lalande 6476. Images quite unsteady.

39. Images better.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
304	+0.018
305	0.020
306	+0.023

APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0			$D=$ Z. D. N. to 1895.0			R		
	304°	305°	306°	304°	305°	306°	304°	305°	306°
h m	s	s	s	″	″	″	″	″	″
3 0	+9.753	+9.840	+ 9.927	−23.76	−23.84	−23.90	88.96	85.70	82.62
3 30	9.614	9.708	9.803	23.36	23.39	23.41	88.96	85.70	82.62
4 [illegible]	9.522	9.622	9.723	22.64	22.62	22.60	88.96	85.70	82.62
4 30	9.478	9.586	9.691	21.61	21.55	21.50	89.00	85.74	82.66
5 [illegible]	9.487	9.597	9.702	20.31	20.21	20.11	89.04	85.78	82.70
5 30	9.544	9.654	9.762	18.73	18.60	18.46	89.08	85.82	82.74
6 0	9.652	9.760	9.867	16.93	16.76	16.58	89.12	85.86	82.78
6 30	+9.806	+9.910	+10.016	−14.93	−14.72	−14.51	89.17	85.90	82.81

1895 NOVEMBER 15. ZONE 154. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°	
1	8.8	52.9	54.9	57.2	59.0	0.9	e	29 27.35	305 56	10.0	9.6	V A	42.670	3 29 41.07	−15 2 43.04	−15	620
2	9.3	......	29.3	31.4	33.4	37.8	c_3 d_1	30 29.23	305 56	"	"	V B	42.770	3 30 42.94	15 9 10.16	15	621
3	8.9	59.0	1.2	3.3	5.5	7.5	c	31 3.30	305 56	"	"	V	41.940	3 31 17.01	15 6 12.77	15	622
4	8.0	49.7	51.7	54.0	56.2	58.3	c	31 53.98	306 34	10.0	11.0	V	50.165	3 32 7.75	14 25 32.73	14	706
5	9.1	56.0	58.2	0.3	2.7	4.7	c	35 0.38	305 16	10.0	9.8	III	43.730	3 35 14.02	15 45 40.22	15	633
6	8.3	50.8	53.0	55.0	57.3	59.4	c	35 55.10	305 58	10.0	9.6	III	46.110	3 36 8.80	15 2 52.91	15	636
7	8.4	37.0	39.0	41.2	43.5	45.5	c	36 41.24	306 24	10.0	9.9	III	45.220	3 36 54.98	14 37 8.86	14	729
8	8.5	57.0	59.4	1.5	3.7	5.8	c	37 1.48	306 24	"	"	III B	43.340	3 37 15.21	14 40 58.32	14	732
9	9.0	5.2	7.1	9.3	11.5	13.7	c	39 9.36	306 36	10.0	10.5	III	46.300	3 39 23.11	14 24 48.11	14	738
10	9.1	16.7	19.0	21.1	23.2	25.4	c	40 21.08	306 12	10.0	11.2	III	43.710	3 40 34.79	−14 49 38.99	14	741

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
11	9.0	15.3	17.5	19.6	21.9	24.0	c	41 19.66	305 38 10.0	9.4	III C	48.320	3 41 33.30	−15 28 39.57	−15 652
12	8.6	32.8	35.0	37.2	39.3	41.4	c	42 37.14	305 38 "	"	III A	42.480	3 42 50.79	15 20 50.50	15 660
13	8.2	1.0	3.1	5.2	7.6	9.6	c	43 5.30	305 38 "	"	III B	50.475	3 43 18.94	15 24 45.89	15 664
14	9.2	7.7	10.0	13.9	15.5	18.2	c_4 d_8	45 5.45	305 6 10 0	10.3	VI B	39.640	3 45 19.03	16 0 17.86	16 708
15	8.0	51.4	53.4	55.6	57.9	0.0	c	45 55.66	305 6 "	"	V	45.735	3 46 9.25	15 55 6.98	16 710
16	8.2	37.7	39.9	41.9	43.8	45.6	e	46 12.16	306 0 10.0	8.7	VII	47.480	3 46 25.83	15 0 32.92	15 677
17	8.6	56.9	59.0	1.1	3.2	5.3	c	48 1.10	306 36 10.0	10.0	III	47.215	3 48 14.83	14 24 33.77	14 766
18	7.5	35.8	37.9	40.0	42.3	44.4	c	48 40.08	305 48 10.0	10.2	III B	46.550	3 48 53.72	15 16 2.23	15 683
19	9.1	48.9	51.0	53.3	55.6	57.7	c	49 53.30	305 48 "	"	III	43.925	3 50 6.94	15 13 39.74	15 686
20	7.5	3.7	5.8	8.0	10.4	12.4	c	50 8.06	305 48 "	"	V	49.350	3 50 21.70	−15 11 57.04	−15 687

Reduction Elements. Zone 154.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
November 15.3....	−0.093	+0.068	+0.004	−0.093	+0.068	−0.005
15.5....			−0.014			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ζ Eridani		τ⁴ Eridani		Lalande 6476		ε Eridani		Lalande 7685		o¹ Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	311 50 10.20		298 54 9.75		308 0 9.90		311 14 10.00		302 42 9.45		313 56 10.05	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42.975	4 59.33		5 49.25	44.680	5 31.92	42.345	4 47.10	46.130	5 59.48	42.370	4 47.67
II Red. to Mer......	43.050	0.09	45.580	0.19	.725	0.13	.390	0.10	.110	0.18	.420	0.07
VI Inclination	.140		.750	−0.67	.875		.545		.320		.585	
VII Refraction	.210	1 4.5	.760	1 44.3	.895	1 13.9	.545	1 5.9	.365	1 29.8	.570	1 0.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
48 H. Cephei.........	3 7 7.34	11	−0.17	[+3.96]	38 26	....
ζ Eridani...........	3 10 44.17	11	−0.05	+4.02	311 54 5.1	17.2
τ⁴ Eridani...........	3 14 51.03	11	−0.07	+3.93	298 58 14.2	16.3
Lalande 6476......	3 24 38.64	11	−0.06	+3.99	308 4 28.1	16.9
ε Eridani...........	3 27 59.10	11	−0.05	+4.06	311 17 51.3	18.1
Lalande 7685......	4 1 54.66	11	−0.06	+4.01	302 46 39.3	17.8
Groombridge 750..	4 4 4.96	5	−0.52	[+4.11]	46 20	....
o¹ Eridani...........	4 6 44.61	11	−0.05	+4.00	313 59 57.8	17.7

h		s
3.575	*dt*	+4.002
	Hourly rate	0.0000
		° ′ ″
	Adopted Equator Point	321 6 17.33

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 20	29.722	49.1	48.2
4 9	29.718	48.8	47.7

Note.
Lalande 7685. Hazy.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0			*D* = Z. D. N. to 1895.0			*R*		
			305°	306°	307°	305°	306°	307°	305°	306°	307°
°	s	h m	s	s	s	″	″	″	″	″	″
305	−0.060	3 0	+9.828	+9.915	+9.998	−23.22	−23.30	−23.39	.....	.....	.....
306	0.059	3 30	9.687	9.780	9.874	22.74	22.79	22.83	82.66	79.69	76.84
307	−0.058	4 0	+9.592	+9.693	+9.792	−21.97	−21.97	−21.97	82.70	79.73	76.88

1895 NOVEMBER 17. ZONE 155. CLAMP WEST.

SKINNER, OBSERVER.

LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	
1	8.0	24.0	26.1	28.3	30.4	32.7	c	29 28.30	305 56	10.0	7.9	III A	42.665	3 29 41.03	—15 2 43.06	—15 620
2	9.0	25.9	28.0	30.2	32.4	34.4	c	30 30.18	305 56	"	"	III B	42.665	3 30 42.90	15 9 12.07	15 621
3	8.9	0.1	2.3	4.5	6.7	8.8	c	31 4.48	305 56	"	"	III	41.925	3 31 17.20	15 6 13.16	15 622
4	8.0	50.8	52.8	54.9	57.2	59.2	c	31 54.98	306 34	10.0	8.7	III	50.120	3 32 7.76	14 25 33.98	14 706
5	9.0	57.0	59.3	1.5	3.6	5.7	c	35 1.42	305 16	10.0	9.0	III	43.780	3 35 14.07	15 45 40.29	15 633
6	8.0	51.7	53.8	55.9	58.2	0.2	c	35 55.96	305 58	10.0	8.9	III	46.110	3 36 8.67	15 2 53.86	15 636
7	7.0	37.8	40.0	42.1	44.3	46.5	c	36 42.14	306 24	10.0	8.6	III	45.200	3 36 54.89	14 37 10.48	14 729
8	7.5	58.3	0.4	2.6	4.6	6.9	c	37 2.56	306 24	"	"	III B	43.340	3 37 15.30	14 40 59.56	14 732
9	9.1	6.1	8.2	10.4	12.5	14.7	c	39 10.38	306 36	10.0	9.1	III	46.330	3 39 23.14	14 24 48.82	14 738
10	8.9	17.8	19.9	22.0	24.2	26.5	c	40 22.08	306 12	10.0	8.9	III	43.870	3 40 34.80	—14 49 37.67	—14 741
11	9.0	11.5	13.7	16.0	18.1	20.3	c	41 15.92	305 38	10.0	8.5	V B	41.580	3 41 28.57	—15 27 38.60	—15 651
12	8.7	33.7	35.8	37.8	40.2	42.4	c	42 37.98	305 38	"	"	III A	42.500	3 42 50.64	15 20 51.18	15 660
13	8.2	1.9	4.1	6.2	8.4	10.5	c	43 6.22	305 38	"	"	V B	50.620	3 43 18.87	15 24 45.72	15 664
14	9.2	2.0	4.1	6.2	8.5	10.6	c	45 6.28	305 6	10.0	9.0	III C	49.660	3 45 18.87	16 0 17.52	16 708
15	8.0	52.3	54.4	56.5	58.8	0.9	c	45 56.58	305 6	"	"	III	45.780	3 46 9.17	15 55 6.06	16 710
16	.....	15.2	17.3	21.6	23.3	25.9	c_4 d_3	46 13.08	306 0	10.0	8.0	VI	47.490	3 46 25.76	15 0 33.12	15 677
17	8.5	58.0	0.0	2.3	4.4	6.5	c	48 2.24	306 36	10.0	9.3	III	47.230	3 48 14.97	14 24 34.43	14 766
18	7.7	36.9	39.0	41.0	43.2	45.3	c	48 41.08	305 48	9.7	8.2	V B	46.740	3 48 53.73	15 16 1.89	15 683
19	9.0	50.0	52.1	54.2	56.4	58.6	c	49 54.26	305 48	"	"	III	43.950	3 50 6.91	15 13 41.04	15 686
20	7.0	4.8	6.9	9.0	11.2	13.5	c	50 9.08	305 48	"	"	V	49.390	3 50 21.73	—15 11 58.06	—15 687
21	8.9	38.6	40.8	42.9	45.2	47.2	c	53 42.94	305 36	10.0	8.6	III A	41.880	3 53 55.56	—15 23 6.90	—15 693
22	8.0	28.6	30.8	33.0	35.3	37.4	c	54 33.02	305 36	"	"	III	44.840	3 54 45.64	15 25 25.79	15 696
23	8.9	10.8	12.9	15.0	17.3	19.3	c	58 15.06	305 36	"	"	III	45.530	3 58 27.67	15 25 13.84	15 708
24	8.9	47.0	49.0	51.4	53.6	55.6	c	59 51.32	305 46	10.0	8.8	III B	45.530	4 0 3.93	15 18 27.10	15 712
25	8.5	51.4	53.5	55.6	57.6	59.8	c	0 55.58	305 46	"	"	III	49.850	4 1 8.20	15 13 51.28	15 715
26	8.0	7.0	8.9	11.0	13.2	15.5	c	1 11.12	306 0	10.0	8.8	V	49.870	4 1 23.76	14 59 51.63	15 717
27	8.0	38.4	40.6	42.8	45.0	47.2	c	2 42.80	305 18	10.0	9.2	III	47.960	4 2 55.37	15 42 29.36	15 720
28	9.3	2.3	4.5	6.6	8.8	11.0	c	3 6.64	305 52	10.0	8.9	V	46.680	4 3 19.26	15 8 53.86	15 722
29	7.7	36.8	38.9	41.1	43.3	45.4	c	5 41.10	305 44	10.0	9.2	III	44.990	4 5 53.70	15 17 26.09	15 733
30	7.8	3.6	5.7	7.8	10.1	12.3	c	6 7.90	306 24	10.0	8.6	V	45.240	4 6 20.57	—14 37 21.13	—14 832
31	9.0	42.0	44.2	46.2	48.4	50.4	c	6 46.24	306 24	"	"	III B	45.670	4 6 58.90	—14 40 25.06	—14 834
32	8.8	12.2	14.3	16.4	18.6	20.8	c	8 16.46	306 24	"	"	III A	43.325	4 8 29.13	14 34 41.91	14 840
33	9.2	46.2	48.3	50.4	52.7	54.8	c	9 50.48	305 54	10.0	8.7	III	49.000	4 10 3.09	15 6 10.36	15 749
34	8.0	11.9	14.0	16.2	18.3	20.4	c	11 16.16	305 54	"	"	III B	45.070	4 11 28.76	15 10 39.57	15 754
35	8.7	53.2	55.4	57.6	59.8	1.9	c	11 57.58	305 54	"	"	III	48.300	4 12 10.19	15 6 24.54	15 757
36	6.8	21.6	23.7	25.8	28.0	30.2	c	13 25.86	306 14	10.0	8.5	III C	47.840	4 13 38.49	14 52 59.21	14 866
37	9.1	47.9	50.0	52.2	54.3	56.4	c	13 52.16	306 14	"	"	III	45.220	4 14 4.79	14 47 23.45	14 867
38	8.7	21.4	23.5	25.4	27.0	29.4	a	15 54.98	306 34	10.0	9.0	I	44.490	4 16 7.65	14 27 35.46	14 875
39	7.8	8.1	10.3	12.1	14.0	16.2	a	16 41.78	306 34	"	"	I B	45.035	4 16 54.44	14 30 38.34	14 881
40	9.0	34.9	36.6	40.7	42.9	45.0	b_2 c_3	16 45.03	306 14	10.0	8.7	III B	42.590	4 16 57.65	—14 51 28.12	—14 882
41	8.5	50.6	52.7	54.9	57.2	1.2	c_2 d_1	16 52.76	306 14	"	"	V A	(40).080	4 17 5.39	—14 45 49.17	—14 884
42	9.3	12.5	14.5	16.9	19.0	21.1	c	18 16.80	306 2	10.0	8.7	III	37.950	4 18 29.40	15 1 45.01	15 772
43	9.0	45.4	47.6	49.6	51.5	53.3	e	18 19.86	306 2	"	"	VII A	37.890	4 18 32.47	14 58 33.63	15 773
44	8.2	37.4	39.5	41.7	43.9	46.0	c	19 41.70	306 10	10.0	8.7	III	48.110	4 19 54.32	14 50 30.15	14 897
45	8.0	5.2	7.5	9.6	11.7	13.9	c	20 9.58	306 10	"	"	III B	44.050	4 20 22.19	14 55 1.54	15 780
46	7.8	54.5	56.5	58.7	1.0	3.0	c	21 58.74	306 10	"	"	III	47.310	4 22 11.36	14 50 46.34	14 903
47	9.1	55.4	57.4	59.3	1.2	3.5	a	23 28.96	306 48	10.0	8.1	I	50.360	4 23 41.64	14 11 45.28	14 907^1
48	9.2	24.8	27.0	29.2	31.2	33.4	c	23 29.12	306 48	"	"	III	49.350	4 23 41.80	14 12 6.16	14 907^2
49	8.0	29.1	31.2	33.3	35.5	37.7	c	24 33.36	306 48	"	"	III B	45.960	4 24 46.03	14 16 24.90	14 913
50	9.0	56.7	58.8	1.0	3.2	5.3	c	25 1.00	306 48	"	"	III B	45.820	4 25 13.67	—14 16 27.77	—14 916
51	8.9	54.7	56.9	59.0	1.1	3.3	c	27 59.00	307 0	10.0	9.1	III	44.140	4 28 11.70	—14 1 46.71	—14 923
52	7.8	33.4	35.5	37.2	39.0	41.4	a	32 7.03	305 54	10.0	8.3	I	44.390	4 32 19.61	15 7 45.48	15 819
53	9.2	58.6	0.1	4.5	6.5	8.7	b_2 c_3	32 8.69	305 54	"	"	III A	42.650	4 32 21.27	15 5 5.03	15 820
54	9.4	41.5	43.7	45.6	47.7	49.7	e	32 15.99	305 54	"	"	VII(C)	48.195	4 32 28.56	15 13 2.40	15 822
55	4.	19.0	21.3	23.4	25.5	27.6	c	33 23.36	306 32	10.0	9.1	V	43.920	4 33 36.00	14 29 55.56	14 933
56	6.0	26.7	28.8	31.0	33.3	35.3	c	34 31.02	306 32	"	"	III B	43.800	4 34 43.66	14 33 10.22	14 936
57	7.8	42.7	44.8	47.0	49.3	51.4	c	36 47.04	306 8	10.0	9.1	III	47.590	4 36 59.64	14 52 46.22	14 943
58	8.8	58.0	0.2	2.3	4.5	6.7	c	41 2.34	306 22	10.0	8.8	III	47.230	4 41 14.96	14 38 54.12	14 958
59	9.0	47.3	49.3	51.7	53.8	55.8	c	41 51.58	306 6	10.0	8.9	V	43.920	4 42 4.17	14 56 0.05	15 861
60	8.0	1.0	3.2	5.3	7.5	9.6	c	43 5.32	305 40	10.0	8.6	III	47.780	4 43 17.87	—15 20 46.51	—15 865
61	8.2	50.9	53.1	55.2	57.4	59.7	c	43 55.26	305 40	"	"	III B	47.170	4 44 7.80	—15 24 11.82	—15 867
62	9.0	0.6	2.7	4.8	7.0	9.2	c	46 4.86	305 48	10.0	8.8	III B	41.210	4 46 17.41	15 18 6.49	15 875
63	8.0	14.7	16.9	19.0	21.2	23.3	c	47 19.02	305 48	"	"	III	46.330	4 47 31.58	15 13 15.40	15 880
64	8.0	34.2	36.3	38.5	40.8	42.9	c	47 38.54	305 58	10.0	8.7	V	44.500	4 47 51.12	15 3 51.54	15 883
65	8.0	21.6	23.7	25.8	28.0	30.1	c	49 25.84	305 54	10.0	8.8	III	49.040	4 49 38.41	15 6 23.88	15 893
66	8.1	28.7	30.9	33.0	35.2	37.5	c	50 33.06	306 6	10.0	9.0	III	50.780	4 50 45.66	14 53 50.21	14 994
67	7.6	8.4	10.5	12.6	14.8	16.9	c	51 12.64	306 6	"	"	III C	45.210	4 51 25.22	—15 2 3.56	—15 903

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
68	8.7	45.1	47.2	49.4	51.5	53.7	c	52 49.38	306	26	10.0	8.5	III	46.150	4 53 2.01	−14 35 19.14	−14 1002
69	8.8	23.0	25.1	27.4	29.6	31.6	c	53 27.34	306	26	“	“	III	42.940	4 53 39.97	14 36 20.99	14 1005
70	9.1	28.3	30.3	32.2	34.0	36.4	a	55 1.99	305	46	10.2	9.2	I	45.225	4 55 14.55	−15 15 37.77	−15 916
71	9.1	9.3	11.6	13.7	16.0	18.0	c	57 13.72	305	38	9.4	7.6	V	47.420	4 57 26.27	−15 23 0.93	−15 925
72	8.8	52.9	55.0	57.2	59.4	1.6	c	58 57.22	306	20	10.0	8.7	III B	40.050	4 59 9.84	14 46 31.98	14 1025
73	......	35.0	37.0	39.2	41.2	43.0	e	59 9.51	306	20	“	“	V A	38.400	4 59 22.14	14 40 36.52	14 1028
74	8.6	57.7	0.2	2.2	4.5	6.5	c	1 2.22	306	10	10.0	8.7	V B	44.450	5 1 14.82	14 55 10.36	14 1039
75	......	36.2	38.6	40.6	44.8	46.5	c_3 d_2	1 36.33	306	10	“	“	V A	40.750	5 1 48.94	14 49 52.84	14 1045
76	7.5	24.2	26.5	28.6	30.8	33.0	c	3 28.62	305	48	10.0	8.9	III	45.740	5 3 41.19	15 13 32.65	15 950
77	9.5	42.7	45.0	46.8	50.9	52.6	c_3 d_2	4 42.57	305	48	“	“	III	40.800	5 4 55.14	15 15 7.93	15 954
78	8.6	37.5	39.7	41.8	44.2	46.1	c	6 41.86	305	48	“	“	III A	44.540	5 6 54.44	15 10 41.49	15 965
79	9.2	27.3	29.5	31.5	33.7	35.9	c	7 31.58	305	48	“	“	III A	41.890	5 7 44.16	15 11 32.68	15 968
80	8.8	58.5	0.7	2.8	5.1	7.2	c	8 2.86	305	48	“	“	III	46.910	5 8 15.44	−15 13 11.93	−15 972
81	9.4	14.3	16.6	18.8	21.0	23.2	c	9 18.78	305	48	“	“	III A	46.890	5 9 31.37	−15 9 57.39	−15 976
82	9.1	48.6	50.7	52.5	54.3	56.6	a	10 22.28	305	48	“	“	I	47.930	5 10 34.86	15 12 51.69	15 984
83	8.8	23.5	25.7	27.9	30.0	32.1	c	10 27.84	305	48	“	“	III C	46.010	5 10 40.41	15 19 56.32	15 986
84	9.0	56.7	58.7	0.9	3.0	5.2	c	12 0.90	305	48	“	“	III	50.320	5 12 13.49	15 12 7.97	15 993
85	9.2	45.9	48.0	50.1	52.5	54.5	c	12 50.20	305	48	“	“	III C	47.630	5 13 2.77	15 19 26.12	15 1000
86	7.8	17.0	19.2	21.2	23.1	24.9	e	12 51.42	305	48	“	“	VII C	47.150	5 13 3.99	15 19 37.48	15 1001
87	8.8	42.0	44.3	46.2	48.3	50.6	c	15 46.28	306	20	10.0	8.4	III	45.990	5 15 58.93	14 41 31.09	14 1099
88	8.5	7.3	9.4	11.6	13.9	15.8	c	16 11.60	306	20	“	“	III B	48.850	5 16 24.24	14 43 49.67	14 1102
89	7.7	31.6	33.7	35.8	38.0	40.3	c	16 35.88	306	20	“	“	V A	43.030	5 16 48.53	14 39 14.33	14 1105
90	7.5	29.6	31.6	33.8	36.0	38.2	c	18 33.84	306	6	10.0	8.2	III	45.750	5 18 46.47	−14 55 37.56	−14 1117
91	9.0	1.9	4.0	6.0	8.3	10.4	c	19 6.12	305	28	10.0	8.4	III	46.150	5 19 18.68	−15 33 31.93	−15 1027
92	8.8	46.6	48.7	50.8	53.0	55.0	c	20 50.82	306	28	10.0	9.0	III A	41.690	5 21 3.49	14 31 39.44	14 1128
93	8.8	2.7	5.0	7.0	9.2	11.4	c	21 7.06	306	28	“	“	V B	41.780	5 21 19.72	14 38 8.03	14 1131
94	8.0	52.8	55.0	57.2	59.2	1.3	c	21 57.10	305	46	10.0	9.0	III A	40.330	5 22 9.70	15 14 8.07	15 1037
95	8.6	44.5	46.6	48.8	51.0	53.0	c	22 48.78	305	46	“	“	III B	42.440	5 23 1.37	15 19 56.60	15 1047
96	9.5	59.6	2.0	3.9	6.1	8.1	c	24 3.94	305	46	“	“	III B	47.620	5 24 16.53	15 18 17.65	15 1052
97	8.6	52.4	54.6	56.8	59.0	1.0	c	26 56.76	305	46	“	“	III	42.680	5 27 9.36	15 16 40.25	15 1068
98	8.8	30.2	32.3	34.5	36.7	38.8	c	27 34.50	305	46	“	“	V B	43.010	5 27 47.10	15 19 48.99	15 1073
99	9.3	2.9	4.9	9.3	10.9	13.4	c_4 d_3	28 0.69	305	46	“	“	VI B	50.570	5 28 13.29	15 17 24.74	15 1079
100	8.7	21.0	23.1	25.3	27.6	29.7	c	29 25.34	305	46	“	“	III C	49.000	5 29 37.94	−15 21 6.09	−15 1082
101	9.2	17.0	19.3	21.3	23.7	25.9	c	30 21.44	305	46	“	“	III A	45.730	5 30 34.07	−15 12 27.59	−15 1085
102	9.3	6.1	8.0	10.2	12.3	14.7	c	31 10.26	305	34	10.0	8.5	III A	43.640	5 31 22.87	15 25 8.88	15 1090
103	8.8	22.9	24.9	29.2	30.9	33.5	c_4 d_3	31 20.69	305	34	“	“	VI	49.120	5 31 33.29	15 26 41.12	15 1092
104	8.8	24.7	27.0	29.0	31.1	33.4	c	35 29.04	305	54	10.0	8.3	III	50.860	5 35 41.69	15 6 6.39	15 1116
105	8.9	4.4	6.6	8.7	10.8	13.0	c	36 8.70	305	54	“	“	V	50.420	5 36 21.35	15 6 16.44	15 1119
106	9.0	44.2	46.3	48.5	50.7	52.9	c	37 48.52	305	54	“	“	III	44.880	5 38 1.17	15 8 2.05	15 1133
107	8.0	44.3	46.4	48.2	50.0	52.4	a	40 18.01	305	48	10.0	9.0	I (B)	45.830	5 40 30.65	15 16 56.28	15 1148
108	8.8	16.1	17.7	21.7	24.0	26.3	b_2 c_3	40 26.17	305	48	“	“	III A	40.930	5 40 38.82	15 12 3.40	15 1149
109	9.1	43.3	45.3	47.5	49.6	51.8	c	40 47.50	305	48	“	“	V B	47.070	5 41 0.15	15 16 35.92	15 1151
110	8.9	51.9	54.1	56.1	57.9	59.7	e	41 26.29	305	48	“	“	VII B	47.710	5 41 38.94	−15 16 25.23	−15 1159
111	9.0	31.2	33.3	35.5	37.8	39.7	c	42 35.50	305	48	“	“	V C	51.050	5 42 48.15	−15 18 32.72	−15 1166
112	7.0	9.3	11.7	13.6	15.7	17.5	e	42 43.90	305	48	“	“	VII B	45.080	5 42 56.55	15 17 16.17	15 1168
113	......	13.0	15.0	17.2	19.2	21.4	c	45 17.16	305	32	10.0	8.9	III	48.810	5 45 29.80	15 28 50.24	15 1182
114	9.0	39.7	41.9	44.0	46.1	48.3	c	45 44.00	305	32	“	“	III B	49.540	5 45 56.63	15 31 49.70	15 1185
115	7.5	44.7	46.7	48.7	50.7	52.8	a	47 18.50	305	32	“	“	I B	49.330	5 47 31.14	15 31 52.58	15 1193
116	8.8	12.8	15.1	16.7	18.7	21.0	[illegible]	47 46.65	305	32	“	“	I C	51.810	5 47 59.28	15 34 18.45	15 1199
117	8.6	50.7	52.7	55.0	56.9	59.1	c	47 54.88	305	32	“	“	V	45.660	5 48 7.52	15 29 53.03	15 1200
118	......	25.2	27.4	29.3	31.3	33.3	e	47 59.60	305	32	“	“	VII B	46.340	5 48 12.24	15 32 54.85	15 1202
119	9.0	48.9	51.2	53.4	55.7	57.7	c	48 53.38	305	32	“	“	V	48.330	5 49 6.03	15 29 2.16	15 1208
120	9.0	58.6	0.8	2.9	5.0	7.2	c	51 2.90	305	50	9.8	7.0	III	45.120	5 51 15.58	−15 12 3.36	−15 1217
121	8.5	22.4	24.6	26.7	28.9	......	c	51 26.72	305	30	10.0	9.1	V	44.580	5 51 39.37	−15 32 15.09	−15 1221
122	7.5	46.3	47.8	52.0	54.3	56.4	(b_2c_3)	52 56.38	305	40	10.5	9.6	III B	45.880	5 53 9.05	15 25 1.63	15 1226
123	9.0	27.1	29.4	31.6	33.7	35.7	c	53 31.50	305	40	“	“	V B	41.130	5 53 44.17	15 26 34.56	15 1230
124	9.0	58.1	0.3	2.3	4.2	6.0	e	53 32.50	305	40	“	“	VII (B)	43.525	5 53 45.17	15 25 49.94	15 1231
125	9.0	47.7	49.9	52.1	54.2	56.4	c	54 52.06	305	40	“	“	III	45.780	5 55 4.74	15 21 50.95	15 1236
126	8.6	15.0	16.8	19.0	21.4	23.4	c	55 19.12	306	2	10.0	8.9	V B	42.040	5 55 31.83	15 4 17.23	15 1239
127	......	1.6	3.7	5.9	7.9	12.3	c_2 d_1	56 3.72	306	2	“	“	III	44.110	5 56 16.44	15 0 22.94	15 1242
128	9.3	11.4	13.6	15.8	18.0	20.2	c	59 15.80	306	12	10.2	9.6	III	47.360	5 59 28.56	14 49 20.79	14 1321
129	9.1	37.6	39.8	42.0	44.0	48.2	c_2 d_1	59 39.76	306	12	“	“	III	48.090	5 59 52.52	14 49 6.93	14 1323
130	8.5	16.8	18.9	21.0	23.4	25.5	c	0 21.12	305	36	10.0	8.8	III	48.280	6 0 33.82	−15 25 5.88	−15 1265
131	5.5	20.6	22.8	24.9	27.1	29.3	c	1 24.94	306	6	10.0	9.2	III	46.690	6 1 37.69	−14 55 35.04	−14 1331
132	9.0	27.9	29.8	32.0	34.4	36.5	c	3 32.12	305	38	10.0	8.5	III	43.400	6 3 44.83	15 24 40.79	15 1277
133	6.0	45.0	47.1	49.3	51.5	53.4	c	4 49.26	306	28	10.0	9.3	III	45.180	6 5 2.06	14 34 4.10	14 1348
134	9.1	4.9	7.0	9.2	11.3	13.4	c	5 9.16	306	28	“	“	V A	43.110	6 5 21.97	14 31 30.05	14 1350
135	......	26.8	29.0	31.3	35.4	36.9	c_3 d_2	5 26.87	306	28	“	“	V A	42.290	6 5 39.68	14 31 45.91	14 1353
136	8.9	28.9	30.9	32.7	34.7	36.9	a	7 2.60	305	30	10.0	9.5	III	46.390	6 7 15.31	15 31 44.61	15 1304
137	8.9	4.4	6.5	8.5	10.7	12.9	c	7 8.60	305	30	“	“	V C	50.840	6 7 21.30	15 36 46.63	15 1307
138	8.0	36.9	39.2	41.3	43.5	45.7	c	8 41.32	305	40	10.0	9.5	III	47.420	6 8 54.06	15 21 24.93	15 1314
139	9.1	0.5	2.7	4.9	7.0	9.2	c	11 4.86	305	40	“	“	III A	44.080	6 11 17.61	15 19 14.52	15 1322
140	8.8	14.9	17.2	19.3	21.4	23.6	c	11 19.28	305	40	“	“	V	47.020	6 11 32.03	−15 21 34.91	−15 1325

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″	r	h m s	° ′ ″	°
141	8.7	49.2	51.3	53.4	55.7	57.8	c	12 53.48	305 40 10.0	9.5	III B 46.880	6 13 6.23	−15 24 50.13	−15 1335
142	8.7	12.2	14.3	16.5	18.7	20.8	c	14 16.50	305 40 "	"	III 46.390	6 14 29.26	15 21 46.74	15 1342
143	8.2	24.5	26.6	28.7	30.9	33.1	c	16 28.76	306 46 10.0	9.1	III 47.050	6 16 41.65	14 15 31.68	14 1412
144	8.8	50.0	52.0	54.2	56.4	58.5	c	16 54.22	306 46 "	"	III C 49.620	6 17 7.10	14 21 8.72	14 1415
145	9.1	53.3	55.5	57.7	0.0	2.0	c	19 57.70	305 26 10.0	9.0	III 46.500	6 20 10.46	15 35 47.73	15 1373
146	8.0	52.7	54.8	56.9	59.1	1.3	c	21 56.96	306 28 10.0	8.8	III 50.025	6 22 9.84	14 32 37.65	14 1450
147	9.4	13.6	15.8	18.0	20.1	22.3	c	22 17.96	306 28 "	"	V B 45.260	6 22 30.84	14 37 24.06	14 1453
148	9.4	47.4	49.6	51.6	53.6	55.4	e	23 21.75	304 58 10.0	9.5	V 44.600	6 23 34.48	16 4 28.06	16 1491
149	9.3	3.6	5.7	7.8	......	12.0	c	25 7.82	306 0 9.5	8.6	III B 40.970	6 25 20.66	15 6 47.70	15 1403
150	8.9	37.7	40.0	42.2	44.4	46.4	c	25 42.14	306 0 "	"	III 45.870	6 25 54.99	−15 2 0.57	−15 1410
151	8.3	53.4	55.4	57.6	59.8	2.0	c	27 57.64	305 16 10.0	9.1	III 46.320	6 28 10.43	−15 45 54.61	−15 1423
152	9.3	37.3	39.4	41.5	43.9	45.9	c	32 41.60	306 10 10.4	9.6	III 43.680	6 32 54.50	14 52 43.64	14 1512
153	9.6	32.1	34.1	36.4	38.4	41.4	c	33 36.28	305 22 10.0	8.7	III A 44.830	6 33 49.11	15 37 9.70	15 1461
154	9.5	37.0	39.1	41.3	43.6	45.7	c	35 41.34	305 22 "	"	III C 48.620	6 35 54.17	15 45 39.33	15 1467
155	9.5	7.0	9.0	11.3	13.5	15.6	c	36 11.28	305 22 "	"	V 45.510	6 36 24.12	15 40 14.35	15 1474
156	8.8	9.3	11.3	13.4	15.6	17.8	c	38 13.48	305 22 "	"	III A 41.900	6 38 26.34	15 38 7.61	15 1481
157	8.4	25.4	27.6	29.7	31.9	34.1	c	38 29.74	305 22 "	"	V B 43.710	6 38 42.59	15 44 3.22	15 1484
158	9.4	19.2	21.3	23.5	25.6	27.7	c	41 23.46	305 34 10.0	9.4	V 42.760	6 41 36.35	15 29 8.00	15 1504
159	9.3	31.2	33.3	35.6	37.7	40.0	c	44 35.56	305 12 9.4	8.6	III A 42.390	6 44 48.44	15 48 1.37	15 1523
160	9.0	7.4	9.3	11.1	13.1	15.5	a	45 41.12	305 12 "	"	I B 41.260	6 45 53.99	−15 54 50.43	−15 1533

Reduction Elements. Zone 155.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 17.4....	−0.044	+0.105		−0.036	+0.116	−0.148
17.6....	−0.029	+0.028	−0.148			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ζ Eridani		τ4 Eridani		Lalande 6476		ε Eridani		β Canis Majoris		ξ2 Canis Majoris	
	CIRCLE READING.	° ′ ″ 311 50 9.25		° ′ ″ 298 54 9.10		° ′ ″ 308 0 9.60		° ′ ″ 311 14 9.10		° ′ ″ 303 8 8.45		° ′ ″ 298 10 9.60	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	43.010	5 0.42	45.650	5 50.56	44.715	5 32.35	42.390	4 47.27		5 39.52	43.940	5 17.44
II	Red. to Mer......	.090	0.09	.710	0.22	.750	0.13	.380	0.10	45.080	0.15	.960	0.23
VI	Inclination	.215		.880		.890		.530		.240	−0.67	44.130	
VII	Refraction.......	.290	1 5.5	.820	1 45.9	.910	1 15.1	.560	1 7.0	.250	1 30.1	.120	1 49.6

		α Canis Majoris		θ Canis Majoris	
	CIRCLE READING.	° ′ ″ 304 28 9.60		° ′ ″ 309 8 10.10	
		r	′ ″	r	′ ″
I	Microm. Eq......	44.360	5 26.46	43.225	5 4.33
II	Red. to Mer......	.420	0.16	.280	0.12
VI	Inclination	.630		.420	
VII	Refraction.......	.625	1 25.7	.490	1 12.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ζ Eridani...........	3 10 45.16	11	−0.07	+3.07	311 54 4.3	16.7
τ4 Eridani...........	3 14 51.94	11	−0.12	+3.09	298 58 14.0	16.6
Lalande 6476......	3 24 39.67	11	−0.08	+3.01	308 4 27.0	16.2
ε Eridani...........	3 28 0.15	11	−0.07	+3.05	311 17 49.5	16.6
β Canis Majoris	6 18 5.25	11	−0.10	+3.06	303 12 17.3	16.9
ξ2 Canis Majoris	6 30 39.85	10	−0.12	+3.14	298 13 37.7	17.4
α Canis Majoris	6 40 31.99	11	−0.10	+3.07	304 32 10.5	18.3
θ Canis Majoris	6 49 19.41	11	−0.08	+3.01	309 12 2.2	17.1
51 H. Cephei.........	6 52 0.85	6	+3.12	[+3.08]	48 16	....

h		s
3.328............	*dt*	+3.055
	Hourly rate	+0.0046

Adopted Equator Point ....321° 6′ 16.98″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 13	29.704	41.9	40.3
3 57	29.710	41.8	39.1
6 2	29.704	40.6	38.5
6 51	29.709	40.8	38.3

Notes.

32. Images diffuse; rather unsteady.

51 H. Cephei. Foggy just at close of work.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				$D =$ Z. D. N. to 1895.0				K			
			305°	306°	307°	308°	305°	306°	307°	308°	305°	306°	307°	307° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
305	−0.094	3 30	+9.666	+ 9.760	+ 9.852	.....	−22.34	−22.40	−22.45	.....	84.04	81.02	78.13	76.74
306	0.090	4 0	9.566	9.666	9.763	+9.861	21.53	21.54	21.55	−21.56	84.18	81.15	78.25	76.86
307	0.087	4 30	9.512	9.612	9.719	+9.820	20.44	20.40	20.37	−20.33	84.20	81.17	78.27	76.88
308	−0.084	5 0	9.508	9.615	9.720	.....	19.07	18.98	18.91	.....	84.24	81.21	78.31	76.91
		5 30	9.551	9.660	9.765	.....	17.43	17.32	17.20	.....	84.26	81.23	78.32	76.93
		6 0	9.645	9.750	9.857	.....	15.59	15.43	15.27	.....	84.28	81.25	78.34	76.95
		6 30	9.784	9.887	9.990	.....	13.54	13.34	13.16	.....	84.29	81.26	78.36	76.97
		7 0	+9.966	+10.065	+10.166	.....	−11.34	−11.12	−10.89	.....	84.31	81.28	78.38	76.98

1895 NOVEMBER 20. ZONE 156. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°	
1	9.5	49.7	51.8	53.7	55.6	......	a	31 23.86	303	20	10.0	5.8	I A	43.390	3 31 38.01	−17 38 41.16	−17	698
2	6.0	25.4	27.6	29.7	32.1	34.2	c	31 29.80	303	20	"	"	III C	45.070	3 31 43.94	17 47 52.30	17	699
3	8.9	58.1	0.4	2.4	4.6	6.6	c	37 2.42	303	36	10.0	5.9	III A	44.760	3 37 16.57	17 22 17.49	17	713
4	7.8	12.0	14.2	16.4	18.6	20.8	c	37 16.40	303	36	"	"	V B	47.545	3 37 30.54	17 27 54.38	17	715
5	8.8	36.1	38.5	42.8	44.3	46.9	c_4 d_3	37 34.05	303	36	"	"	VI C	51.000	3 37 48.19	17 30 1.22	17	718
6	8.2	47.1	49.4	51.3	53.5	55.7	c	40 51.40	303	36	"	"	III B	49.260	3 41 5.53	17 27 21.12	17	723
7	9.1	50.7	52.9	55.0	57.3	59.4	c	41 55.06	303	12	10.0	5.9	III	44.750	3 42 9.16	17 49 36.07	17	727
8	8.0	40.4	42.4	44.6	46.8	49.0	c	42 44.64	303	12	"	"	III	43.750	3 42 58.73	17 49 55.56	17	730
9	9.1	35.8	37.9	40.2	42.4	44.5	c	44 40.16	303	12	"	"	III A	46.490	3 44 54.25	17 45 48.19	17	734
10	8.5	56.3	58.5	0.4	2.3	4.6	a	47 30.56	303	12	"	"	I	44.290	3 47 44.63	−17 49 45.24	−17	746
11	8.7	39.9	42.0	44.2	46.5	48.6	c	47 44.24	303	48	10.0	6.1	III	46.940	3 47 58.37	−17 12 53.92	−17	747
12	8.6	25.9	28.1	29.8	31.7	34.0	a	50 0.02	303	20	10.0	5.7	I A	42.410	3 50 14.10	17 39 6.27	17	752
13	8.0	57.2	59.3	1.3	3.7	5.9	c	50 1.48	303	20	"	"	III B	41.950	3 50 15.55	17 45 45.54	17	754
14	8.0	54.6	56.8	59.0	1.2	3.4	c	50 59.00	303	0	10.0	6.5	III A	41.450	3 51 13.04	17 59 27.47	18	701
15	9.1	3.6	5.8	8.0	10.2	12.2	c	52 7.96	303	0	"	"	III	44.945	3 52 22.00	18 1 36.20	18	703
16	8.9	34.4	36.7	38.9	41.0	43.2	c	52 38.84	303	10	10.0	5.7	III A	42.015	3 52 52.90	17 49 17.04	17	760
17	9.3	35.5	37.6	39.9	42.1	44.4	c	53 39.90	303	10	"	"	III C	48.450	3 53 53.94	17 56 55.52	18	712
18	8.9	45.5	47.7	49.7	52.0	54.0	c	55 49.78	303	42	10.0	5.8	III A	42.520	3 56 3.88	17 17 6.58	17	774
19	8.6	58.4	0.5	2.6	4.8	6.9	c	56 2.64	303	42	"	"	V B	43.430	3 56 16.73	17 23 19.47	17	775
20	9.3	30.4	32.7	34.9	37.0	39.3	c	0 34.86	303	32	10.0	5.7	III	46.600	4 0 48.93	−17 29 5.97	−17	790
21	7.0	49.6	51.8	53.9	56.2	58.4	c	1 53.98	302	42	10.0	5.7	III	46.580	4 2 7.96	−18 19 9.67	−18	752
22	8.6	48.4	50.5	52.7	54.9	57.0	c	2 52.70	303	44	10.0	6.1	V	45.030	4 3 6.79	17 17 37.37	17	796
23	8.8	54.9	57.1	59.1	1.4	3.5	c	3 59.20	303	6	10.0	6.1	III C	50.350	4 4 13.21	18 0 22.68	18	762
24	8.0	13.2	15.3	17.7	19.9	22.3	c	4 17.68	303	6	"	"	V A	44.510	4 4 31.70	17 52 34.73	17	801
25	9.0	49.4	51.6	53.7	56.0	58.1	c	4 53.76	303	52	10.0	6.3	V	47.200	4 5 7.86	17 8 55.89	17	807
26	9.0	54.0	56.0	58.3	0.5	2.6	c	5 58.28	303	34	10.0	6.3	III A	45.470	4 6 12.35	17 24 13.71	17	810
27	6.5	11.5	13.6	15.8	18.0	20.2	c	7 15.82	303	34	"	"	III B	41.970	4 7 29.87	17 31 50.09	17	816
28	8.7	54.7	56.8	59.0	1.2	3.4	c	8 59.02	303	16	10.0	5.6	III A	41.150	4 9 13.04	17 43 39.07	17	825
29	9.0	26.0	28.2	30.3	32.5	34.7	c	9 30.34	303	16	"	"	III	46.220	4 9 44.36	17 45 17.36	17	829
30	9.2	19.8	21.9	24.2	26.4	28.5	c	10 24.16	303	4	10.0	6.0	V	46.410	4 10 38.16	−17 57 15.85	−18	790
31	9.0	38.9	40.9	42.9	44.7	47.0	a	12 12.94	303	46	10.7	6.7	I B	46.470	4 12 27.00	−17 18 22.52	−17	836
32	9.1	35.9	37.9	39.8	41.7	44.0	a	13 9.90	303	46	"	"	I A	43.530	4 13 23.97	17 12 50.59	17	840
33	8.3	13.1	15.2	17.4	19.7	21.7	c	13 17.42	303	46	"	"	III B	46.140	4 13 31.48	17 18 30.96	17	841
34	8.2	59.4	1.6	3.5	5.8	8.0	c	14 3.66	303	4	10.0	5.4	III	46.950	4 14 17.65	17 57 5.75	18	802
35	8.0	5.8	7.9	10.0	12.3	14.5	c	15 10.10	303	18	10.0	6.0	III	49.500	4 15 24.11	17 42 16.10	17	854
36	8.4	59.2	1.1	3.2	5.3	9.5	c_2 d_1	16 1.06	303	18	"	"	III	50.670	4 16 15.08	17 41 53.93	17	857
37	8.6	38.3	40.5	42.3	44.9	47.0	c	16 42.60	303	48	10.0	5.9	V	43.680	4 16 56.67	17 14 8.07	17	860
38	8.7	22.8	25.0	27.1	29.5	31.5	c	17 27.18	303	48	"	"	V B	45.290	4 17 41.24	17 16 50.95	17	864
39	8.7	48.8	50.9	53.1	55.5	57.6	c	18 53.18	303	14	10.0	6.3	III	47.800	4 19 7.19	17 46 50.13	17	867
40	8.3	43.0	45.0	47.2	49.5	51.6	c	20 47.26	303	(36)	10.0	5.6	III	48.280	4 21 1.30	−17 23 40.73	−17	875
41	9.3	21.1	23.1	25.4	27.6	29.8	c	22 25.40	303	2	10.0	5.7	III B	42.300	4 22 39.37	−18 3 51.27	−18	841
42	9.0	3.2	5.2	7.5	9.8	12.0	c	23 7.54	303	2	"	"	V	48.160	4 23 21.52	17 58 47.09	18	846
43	8.0	42.2	44.4	46.6	48.5	50.5	e	23 16.35	303	2	"	"	VII C	52.600	4 23 30.32	18 3 48.96	18	848
44	8.6	28.9	31.2	33.5	35.8	37.7	c	25 33.42	303	2	"	"	III	43.140	4 25 47.39	18 0 22.99	18	853
45	8.6	42.9	45.1	47.2	49.4	51.6	c	27 47.24	303	2	"	"	III A	42.910	4 28 1.21	17 57 12.80	18	861
46	8.7	55.3	57.4	59.5	1.7	4.0	c	28 59.58	303	24	10.0	6.0	III B	45.385	4 29 13.58	17 40 53.04	17	905
47	9.4	14.0	16.2	18.2	20.7	24.7	c_2 d_1	30 16.16	303	24	"	"	III B	49.700	4 30 30.16	17 39 30.69	17	910
48	7.8	32.9	35.0	37.2	39.6	41.6	c	31 37.26	303	24	"	"	III	41.760	4 31 51.26	17 38 50.28	17	913
49	9.0	3.3	5.5	7.7	9.9	12.1	c	32 7.70	303	24	"	"	III C	42.300	4 32 21.69	17 45 6.33	17	917
50	8.7	1.4	3.6	5.8	8.0	10.1	c	33 5.78	303	24	"	"	III	46.900	4 33 19.79	−17 37 12.14	−17	919
51	8.0	56.5	58.6	0.9	3.2	5.1	c	35 0.86	303	52	10.0	6.1	III	45.720	4 35 14.92	−17 9 33.87	−17	927
52	8.7	40.0	42.3	53.2	54.9	57.4	c_1 d_3	35 44.49	303	12	10.0	5.5	VI (B)	46.460	4 35 58.47	−17 52 38.06	−17	928

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°	
53	9.4	32.6	34.4	36.6	38.8	41.0	c	36 36.68	303	12	10.0	5.5	VI	48.850	4 36 50.66	[−17 48 38.88]	−17	930
54	8.8	6.8	9.0	11.3	13.5	15.7	c	38 11.26	303	0	9.5	5.2	III	47.990	4 38 25.22	18 0 55.15	18	902
55	8.9	6.6	8.7	10.9	12.3	15.4	c	39 10.98	303	30	10.6	6.5	III C	51.450	4 39 24.98	17 36 12.39	17	938
56	8.8	15.8	18.1	20.2	22.5	24.6	c	40 20.24	303	30	"	"	III B	48.100	4 40 34.25	17 34 4.18	17	942
57	8.5	48.7	50.8	53.0	55.3	57.8	c	40 53.12	303	30	"	"	III	50.830	4 41 7.13	17 29 58.70	17	945
58	7.8	41.5	43.7	45.8	48.1	50.4	c	41 45.90	303	2	10.0	6.3	III	43.620	4 41 59.86	18 0 19.41	18	916
59	8.5	28.8	31.1	33.1	35.3	37.4	c	42 33.14	303	36	10.0	5.8	V	46.225	4 42 47.16	17 25 29.35	17	952
60	9.3	......	9.0	13.3	14.9	18.0	c_5 d_3	43 4.77	303	46	10.0	6.3	VI	46.720	[4 43 18.81]	−17 15 19.79	−17	955
61	......	......	6.6	10.7	12.5	14.9	c_5 d_3	44 2.14	303	46	"	"	VI	50.215	4 44 16.18	−17 14 13.08	−17	959
62	8.2	42.7	44.9	46.9	48.9	50.7	e	44 16.85	303	46	"	"	VII B	47.560	4 44 30.88	17 18 18.36	17	960
63	8.8	47.8	50.0	52.0	54.3	56.4	c	48 52.10	303	6	10.0	6.2	III B	43.920	4 49 6.06	17 59 29.41	18	949
64	......	49.2	51.4	......	55.9	57.9	c	50 53.60	303	6	"	"	V	46.610	4 51 7.57	−17 55 26.55	−17	990

Reduction Elements. Zone 156.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 20.4....	−0.030	+0.116	+0.118	−0.042	+0.122	+0.118
20.6....	−0.055	+0.129				

REDUCTION OF THE DECLINATION OF THE ZERO STARS.

	ζ Eridani		τ^4 Eridani		Lalande 6476		ε Eridani		ε Leporis		β Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	311 50 7.65		298 54 7.20		308 0 8.65		311 14 8.30		298 32 7.75		315 48 8.60	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.330	5 5.96	45.975	5 57.56	45.010	5 38.23	42.610	4 51.87	44.950	5 36.12		6 7.52
II Red. to Mer......	.335	0.09	46.080	0.22	.050	0.13	.640	0.10	.920	0.22		0.05
VI Inclination......	.525		.220		.200		.775		45.070		46.640	−1.68
VII Refraction......	.570	1 6.4	.245	1 47.4	.230	1 16.1	.795	1 7.9	.110	1 49.1	.660	57.8

	λ Eridani	
	° ′ ″	
CIRCLE READING.	312 8 8.60	
	r	′ ″
I Microm. Eq......		6 16.83
II Red. to Mer......		0.09
VI Inclination......	47.110	−1.68
VII Refraction......	.160	1 5.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
48 H. Cephei.........	3 7 6.78	11	−0.09	[+4.53]	38 26	....
ζ Eridani...........	3 10 43.48	11	+0.13	+4.58	311 54 7.3	20.1
τ^4 Eridani...........	3 14 50.28	11	+0.13	+4.53	298 58 17.6	20.7
Lalande 6476......	3 24 37.96	11	+0.13	+4.54	308 4 30.9	20.6
ε Eridani...........	3 27 58.51	11	+0.13	+4.52	311 17 52.4	19.9
ε Leporis...........	5 1 0.20	11	+0.13	+4.58	298 35 55.0	20.7
β Eridani...........	5 2 40.68	11	+0.13	+4.63	315 53 16.7	19.9
λ Eridani...........	5 4 6.68	8	+0.13	+4.60	312 13 18 1	20.6

h		s
3.328	*dt*	+4.542
	Hourly rate	+0.0356
		° ′ ″
	Adopted Equator Point	321 6 20.36

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 16	29.377	30.0	28.6
3 57	29.386	29.8	28.5
4 47	29.396	29.8	28.6
5 12	29.408	30.4	29.1

Notes.

ε Eridani. High wind; images somewhat unsteady.

63. Clouds.

λ Eridani. Cloudy in the south.

Observing stopped by clouds. Microscopes I and III used in this zone.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			$D =$ Z. D. N. to 1895.0			R		
			302°	303°	304°	302°	303°	304°	302° 30′	303°	304°
°	s	h m	s	s	s	″	″	″	″	″	″
303	+0.130	3 30	+9.339	+9.437	+9.533	−21.64	−21.71	−21.78	93.52	91.75	88.37
304	0.130	4 0	9.211	9.315	9.416	20.93	20.95	20.98	93.56	91.79	88.41
305	+0.130	4 30	9.136	9.245	9.351	19.93	19.91	19.89	93.58	91.81	88.43
		5 0	+9.113	+9.225	+9.334	−18.64	−18.59	−18.52	93.54	91.77	88.39

1895 NOVEMBER 27. ZONE 157. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.		CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0			δ 1900.0			B. D.	
		s	s	s	s	s		m	s	°	′	″	″		r	h	m	s	°	′	″	°	
1	8.4	17.0	19.2	21.1	23.0	25.3	a	46	51.21	303	38	10.0	6.5	I B	41.030	3	47	0.80	−17	27	55.23	−17	744
2	9.0	58.2	0.3	2.6	4.8	7.0	c	47	2.58	303	38	"	"	III B	46.550	3	47	12.18	17	26	11.10	17	745
3	9.1	5.4	7.6	9.8	11.9	14.1	c	48	9.76	303	38	"	"	III	46.300	3	48	19.36	17	23	2.96	17	749
4	8.3	3.5	5.4	7.5	9.8	11.9	c	50	7.62	303	50	10.0	7.2	III C	44.000	3	50	17.21	17	18	13.00	17	755
5	9.0	40.7	42.9	45.1	47.3	49.3	c	50	45.06	303	50	"	"	III A	43.200	3	50	54.67	17	8	46.93	17	756
6	9.1	33.0	35.0	37.2	41.5	43.2	c_3 d_2	53	32.89	303	28	10.0	7.0	V C	45.640	3	53	42.45	17	39	45.18	17	765
7	9.3	12.6	14.8	16.9	19.2	21.4	c	54	16.98	303	28	"	"	III A	42.910	3	54	26.55	17	30	54.98	17	766
8	8.3	3.3	5.5	7.7	9.9	12.0	c	55	7.68	303	56	10.0	6.9	III	47.980	3	55	17.29	17	4	31.90	17	771
9	8.0	16.8	19.0	21.1	23.4	25.6	c	56	21.18	303	22	10.0	6.6	III	47.430	3	56	30.72	17	38	44.90	17	776
10	9.2	11.3	13.5	15.6	17.8	20.0	c	58	15.64	303	54	10.0	7.0	III B	40.860	3	58	25.22	−17	12	3.00	−17	783
11	9.1	50.4	52.7	54.9	57.2	59.2	c	58	54.88	303	54	"	"	III A	39.740	3	59	4.47	−17	5	56.00	−17	786
12	9.2	2.4	4.7	7.0	9.0	11.3	c	0	6.88	303	54	"	"	III	45.990	4	0	16.46	17	7	11.87	17	788
13	8.9	25.9	28.0	30.2	32.4	34.7	c	0	30.24	303	54	"	"	III	48.330	4	0	39.82	17	6	27.09	17	789
14	8.6	35.6	37.8	39.9	42.1	44.2	c	3	39.92	303	30	10.0	6.3	III	46.650	4	3	49.45	17	31	2.10	17	799
15	8.9	27.5	29.6	31.9	34.0	38.4	c_2 d_1	9	29.69	304	18	10.0	7.4	V C	50.910	4	9	39.28	16	48	6.58	16	815
16	7.5	41.1	43.3	45.5	47.6	49.8	c	10	45.46	304	18	"	"	III	50.630	4	10	55.06	16	41	45.00	16	820
17	8.9	6.6	8.8	10.9	13.1	15.2	c	12	10.92	304	8	10.0	7.0	III	49.550	4	12	20.50	16	52	6.98	16	827
18	8.5	1.8	4.0	6.2	8.5	10.5	c	13	6.20	304	8	"	"	III C	49.220	4	13	15.76	16	58	39.86	17	839
19	9.1	31.0	33.1	34.9	36.9	39.1	a	15	5.02	303	54	10.0	6.4	I	49.010	4	15	14.57	17	6	17.90	17	852
20	8.9	9.7	11.9	14.0	16.3	18.5	c	15	14.08	303	54	"	"	III B	45.700	4	15	23.62	−17	10	36.32	−17	853
21	7.0	56.8	58.9	1.1	3.3	5.4	c	16	1.10	303	54	"	"	III A	45.690	4	16	10.65	−17	4	8.07	−17	856
22	8.4	49.4	51.5	53.7	55.9	58.0	c	20	53.70	304	22	10.0	6.1	III	47.520	4	21	3.29	16	38	48.70	16	853
23	9.1	35.0	37.1	39.2	41.5	43.6	c	21	39.28	304	6	10.0	7.2	III	43.870	4	21	48.84	16	55	59.38	17	877
24	9.2	39.0	41.2	43.3	45.5	47.7	c	22	43.34	303	46	10.0	7.8	III	42.830	4	22	52.86	17	16	20.53	17	881
25	8.3	18.4	20.6	22.6	24.5	26.4	e	22	52.53	303	46	"	"	V B	41.420	4	23	2.04	17	20	2.49	17	883
26	8.9	15.9	18.2	20.2	22.2	24.0	e	23	50.09	303	24	10.0	7.4	VII	45.860	4	23	59.57	17	37	26.69	17	889
27	9.0	34.1	36.2	38.2	40.6	42.8	c	25	38.38	303	54	10.0	6.2	III A	44.040	4	25	47.91	17	4	43.28	17	892
28	8.0	17.2	19.5	21.6	23.8	25.9	c	26	21.60	303	54	"	"	III	49.400	4	26	31.13	17	6	16.09	17	896
29	8.0	44.0	46.1	48.3	50.5	52.7	c	27	48.32	303	32	10.0	6.9	III	47.740	4	27	57.80	17	28	49.36	17	902
30	8.0	16.8	18.9	20.7	22.6	24.8	a	29	50.78	303	58	10.0	7.0	I B	45.790	4	30	0.30	−17	6	37.57	−17	907
31	8.6	32.0	34.1	36.1	37.9	40.2	a	30	6.07	303	58	"	"	III A	43.130	4	30	15.60	−17	1	1.74	−17	909
32	9.2	41.4	43.6	45.7	47.9	50.1	c	31	45.74	303	38	10.0	6.6	III	46.670	4	31	55.22	17	23	11.14	17	914
33	9.0	45.1	47.2	49.4	51.7	53.8	c	33	49.44	304	18	10.0	7.3	III	48.630	4	33	59.00	16	42	31.66	16	909
34	8.5	54.7	56.8	59.0	1.2	3.1	c	34	58.96	304	18	"	"	III B	48.330	4	35	8.52	16	45	51.17	16	916
35	9.1	19.9	22.1	24.2	26.4	28.5	c	35	24.22	304	18	"	"	III B	46.250	4	35	33.77	16	46	31.23	16	919
36	9.0	53.3	55.4	57.5	59.8	2.0	c	36	57.60	304	8	10.0	6.6	III	47.760	4	37	7.14	16	52	50.43	16	924
37	9.0	38.6	40.9	43.0	45.2	47.5	c	37	43.04	303	56	10.0	7.0	III	45.140	4	37	52.56	17	5	41.46	17	933
38	8.8	40.3	42.3	44.4	46.1	48.4	a	42	14.33	303	56	"	"	I B	48.350	4	42	23.84	17	7	53.07	17	949
39	8.9	15.5	17.6	19.8	22.0	24.2	c	42	19.82	303	56	"	"	III B	47.510	4	42	29.32	17	8	10.96	17	950
40	8.7	35.7	38.0	40.2	42.5	44.6	c	42	40.20	303	56	"	"	III B	46.730	4	42	49.70	−17	8	26.05	−17	953
41	5.	52.9	55.1	57.2	59.5	1.5	c	42	57.24	303	56	"	"	V	41.060	4	43	6.75	−17	7	3.02	−17	954
42	8.9	50.5	52.5	54.4	56.3	58.6	a	44	24.42	304	20	10.0	7.0	III	46.470	4	44	33.97	16	41	17.03	16	959
43	8.7	4.4	6.5	8.7	11.0	13.1	c	47	8.74	304	0	10.0	6.0	III A	47.880	4	47	18.27	16	57	37.17	17	974
44	8.5	55.5	57.6	59.8	2.1	4.2	c	47	59.84	304	0	"	"	III	44.450	4	48	9.36	17	1	58.75	17	977
45	8.6	21.4	23.6	25.7	28.0	30.0	c	48	25.74	304	0	"	"	III C	46.230	4	48	35.25	17	7	50.99	17	978
46	9.0	24.0	26.1	28.4	30.5	32.6	c	49	28.32	303	50	10.0	8.2	III A	42.330	4	49	37.82	17	9	24.04	17	984
47	9.0	54.0	56.1	58.2	0.5	2.6	c	49	58.28	303	50	"	"	III B	40.380	4	50	7.77	17	16	30.38	17	986
48	9.2	21.0	23.0	25.2	27.5	29.7	c	51	25.28	303	50	"	"	III C	46.100	4	51	34.77	17	17	54.05	17	992
49	8.0	3.8	6.0	8.2	10.4	12.6	c	52	8.20	304	44	10.0	6.9	III	45.880	4	52	17.80	16	17	29.96	16	999
50	8.8	40.6	42.8	44.9	47.0	49.2	c	52	44.90	304	44	"	"	III B	43.260	4	52	54.49	−16	21	33.78	−16	1001
51	8.7	20.2	22.2	24.5	26.6	28.9	c	53	24.48	304	44	"	"	III B	47.130	4	53	34.07	−16	20	19.75	−16	1006
52	8.6	44.4	46.7	48.8	51.0	53.2	c	53	48.82	304	44	"	"	III B	42.980	4	53	58.41	16	21	39.55	16	1009
53	7.0	19.0	21.2	23.3	25.5	27.7	[illegible]	54	23.34	304	34	10.0	7.2	V B	42.350	4	54	32.91	16	31	53.80	16	1013
54	9.3	25.1	27.2	29.3	31.5	33.7	c	55	29.36	304	34	"	"	V	43.320	4	55	38.93	16	28	22.08	16	1020
55	8.7	38.5	40.7	42.7	45.0	47.1	c	57	42.80	304	44	10.0	6.0	III	42.180	4	57	52.39	16	18	43.49	16	1026
56	8.9	44.1	46.3	48.4	50.6	52.8	c	0	48.44	304	26	10.0	6.6	III	43.940	5	0	58.01	16	36	11.54	16	1037
57	9.0	14.0	16.2	18.1	19.8	22.3	a	1	48.07	304	4	10.0	6.0	III	48.080	5	1	57.60	16	56	53.98	17	1022[1]
58	9.2	44.1	46.3	48.4	50.5	52.7	c	1	48.40	304	4	"	"	V	46.690	5	1	57.93	16	57	22.00	17	1022[2]
59	9.1	20.7	22.9	25.0	27.3	29.5	c	3	25.08	304	4	"	"	III A	42.380	5	3	34.61	16	55	28.57	16	1048
60	8.7	20.0	22.1	24.3	26.4	28.6	c	4	24.28	303	0	10.0	6.1	III	44.390	5	4	33.69	−18	2	9.40	−18	1011
61	9.1	58.6	0.7	2.8	5.0	7.3	c	6	2.88	304	26	10.0	6.6	III	43.280	5	6	12.45	−16	36	26.15	−16	1061
62	8.9	57.7	59.8	1.8	3.6	5.9	a	7	31.83	303	38	10.0	6.9	I	48.150	5	7	41.31	17	22	54.25	17	1045
63	8.6	2.4	4.3	6.3	8.3	10.6	a	8	36.57	302	58	10.0	6.1	I	42.300	5	8	45.98	18	4	49.66	18	1029
64	8.0	41.8	43.7	46.0	48.2	50.3	c	8	46.00	304	0	10.0	6.4	III	46.000	5	8	55.52	17	1	36.52	17	1052
65	8.9	20.1	22.3	24.4	26.6	28.7	c	9	24.42	304	16	10.0	6.5	III	43.420	5	9	33.97	16	46	25.35	16	1078
66	8.0	52.0	54.3	56.1	58.1	0.0	e	9	26.22	304	16	"	"	V	42.090	5	9	35.77	16	46	52.22	16	1080
67	8.7	17.0	19.1	21.3	23.4	25.7	c	11	21.30	304	34	10.0	7.0	III	45.200	5	11	30.88	16	27	50.68	16	1089
68	7.0	7.4	9.8	11.9	14.1	16.3	c	12	11.90	303	46	10.0	7.0	III	47.590	5	12	21.41	17	15	7.80	17	1069
69	9.1	26.7	28.9	31.1	33.3	35.5	c	12	31.10	303	46	"	"	V	44.600	5	12	40.60	17	16	6.65	17	1071
70	9.0	21.1	23.2	25.4	27.6	29.7	c	14	25.40	303	54	10.0	6.0	III A	46.510	5	14	34.93	−17	4	13.98	−17	1083

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
71	9.1	34.5	36.7	38.9	41.2	43.2	c	14 38.90	303	54	10.0	6.0	V C	49.370	5 14 48.41	−17 13 2.00	−17 1084
72	8.9	11.8	13.1	15.2	17.4	19.6	c	15 15.22	303	54	"	"	V B	44.530	5 15 24.74	17 11 22.57	17 1087
73	7.0	16.0	18.1	20.2	22.5	24.6	c	17 20.28	303	20	10.0	6.0	III	44.850	5 17 29.74	17 42 4.31	17 1098
74	9.3	47.2	49.4	51.2	53.0	55.3	[illegible]	18 21.26	303	48	10.0	6.9	III	46.620	5 18 30.77	17 13 28.67	17 1107
75	8.9	27.7	29.7	32.0	34.2	36.3	c	18 31.98	303	48	"	"	V C	49.240	5 18 41.48	17 19 5.84	17 1108
76	8.6	9.1	11.2	13.5	15.7	18.0	c	20 13.50	303	48	"	"	III	50.080	5 20 23.02	17 12 22.94	17 1120
77	8.9	47.3	49.4	51.6	53.9	56.0	c	20 51.64	304	26	10.0	7.0	III C	45.680	5 21 1.21	16 42 11.68	16 1137
78	8.5	21.9	24.2	26.3	28.5	30.6	c	21 26.30	304	26	"	"	III C	42.030	5 21 35.87	16 43 21.96	16 1141
79	8.5	9.2	11.2	13.4	15.7	17.8	c	22 13.46	304	26	"	"	III A	39.940	5 22 23.05	16 34 20.72	16 1145
80	7.7	28.1	30.2	32.4	34.7	36.9	c	22 32.46	304	26	"	"	V	44.120	5 22 42.04	−16 36 17.38	−16 1147
81	8.6	44.7	46.9	49.0	51.3	53.5	c	23 49.08	304	6	10.0	6.0	III	44.950	5 23 58.63	−16 56 2.18	−16 1148
82	9.0	39.9	42.0	44.2	46.4	48.6	c	26 44.22	303	58	10.0	6.4	III	49.540	5 26 53.77	17 2 35.43	17 1158
83	8.2	21.0	23.1	25.5	27.7	29.9	c	27 25.44	303	10	10.0	6.8	III	50.200	5 27 34.90	17 50 25.59	17 1162
84	......	5.3	7.5	9.8	11.9	14.1	c	28 9.72	303	10	"	"	III B	50.250	5 28 19.18	17 53 38.22	17 1166
85	8.9	1.0	3.1	5.2	7.5	9.6	c	29 5.28	303	10	"	"	III	47.640	5 29 14.74	17 51 15.34	17 1170
86	8.8	57.0	59.3	1.4	3.7	5.8	c	30 1.44	303	24	10.0	6.6	III	47.730	5 30 10.93	17 37 13.26	17 1174
87	9.1	21.9	24.0	26.3	28.5	30.6	c	32 26.26	303	48	10.0	6.5	III	45.210	5 32 35.80	17 14 1.22	17 1187
88	8.9	2.8	4.9	7.0	9.5	11.5	c	33 7.14	303	32	10.0	5.6	III	47.550	5 33 16.65	17 29 17.91	17 1191
89	8.0	51.7	53.7	56.0	58.2	0.4	c	36 56.00	303	16	10.0	6.0	III	45.720	5 37 5.48	17 45 55.22	17 1211
90	9.2	1.2	3.4	5.6	7.8	9.9	c	38 5.58	303	16	"	"	III B	41.910	5 38 15.06	−17 50 22.10	−17 1216
91	9.0	18.7	21.0	23.2	25.4	27.3	c	38 23.12	303	16	"	"	V B	43.850	5 38 32.60	−17 49 46.51	−17 1221
92	8.4	25.6	27.6	29.5	31.3	33.7	a	39 59.52	304	14	10.0	6.0	I A	43.690	5 40 9.13	16 45 14.85	16 1224
93	8.9	0.4	2.6	4.7	7.1	9.3	c	40 4.82	304	14	"	"	III B	42.470	5 40 14.42	16 52 8.77	16 1225
94	9.2	47.6	49.9	51.9	54.1	56.4	c	41 51.98	304	14	"	"	III	46.125	5 42 1.59	16 47 45.92	16 1236
95	7.5	17.3	19.3	21.6	23.8	25.9	c	42 21.58	304	22	10.0	5.4	V	42.380	5 42 31.20	16 40 59.19	16 1242
96	8.8	1.2	3.4	5.5	7.7	9.9	c	46 5.54	303	58	10.0	6.0	III C	48.760	5 46 15.12	17 9 24.11	17 1263
97	8.8	20.4	22.4	24.7	27.0	29.1	c	47 24.72	303	58	"	"	III	51.200	5 47 34.32	17 2 11.53	17 1269
98	8.6	34.1	36.4	38.5	40.8	43.0	c	48 38.56	303	18	10.0	6.2	III B	44.520	5 48 48.08	17 47 35.77	17 1277
99	8.6	20.1	22.2	24.4	26.0	28.3	a	49 54.34	303	18	"	"	I B	44.960	5 50 3.86	17 47 26.03	17 1284
100	9.0	53.1	55.3	57.5	59.7	1.9	c	49 57.50	303	18	"	"	III	46.930	5 50 7.03	−17 43 36.70	−17 1285
101	8.8	6.0	8.3	10.4	12.7	14.8	c	51 10.44	303	8	10.0	6.1	III C	42.500	5 51 19.94	−18 1 29.09	−18 1236
102	8.0	29.0	31.2	33.4	35.6	37.7	c	51 33.38	303	8	"	"	III	46.740	5 51 42.89	17 53 41.57	17 1298
103	8.9	46.0	48.2	50.4	52.7	54.7	c	51 50.40	303	8	"	"	V A	45.375	5 51 59.92	17 50 53.96	17 1303
104	9.3	23.2	25.0	27.0	28.8	31.2	a	54 57.01	304	12	10.0	5.6	I A	43.330	5 55 6.66	16 47 27.66	16 1319
105	8.0	56.4	58.6	0.8	2.9	5.1	c	55 0.76	304	12	"	"	III A	43.100	5 55 10.41	16 47 33.83	16 1320
106	9.0	19.6	21.6	23.8	26.1	28.3	c	57 23.88	304	12	"	"	III A	45.500	5 57 33.54	16 46 48.65	16 1337
107	8.9	33.1	35.1	37.4	39.7	41.7	c	59 37.40	304	12	"	"	III B	48.460	5 59 47.06	16 52 21.40	16 1345
108	8.1	7.7	9.8	12.0	14.2	16.4	c	1 12.02	304	12	"	"	III C	43.920	6 1 21.67	16 57 2.07	16 1354
109	8.3	52.4	54.5	56.8	58.9	1.0	c	1 56.72	304	12	"	"	III B	46.130	6 2 6.38	16 53 6.97	16 1356
110	9.1	0.8	2.9	5.1	7.2	9.4	c	3 5.08	304	12	"	"	III	40.880	6 3 14.75	−16 51 34.88	−16 1368
111	9.0	36.9	39.0	41.2	43.5	45.5	c	4 41.22	304	2	10.0	5.9	III	47.670	6 4 50.88	−16 59 25.56	−16 1374
112	8.9	45.8	48.0	50.2	52.5	54.5	c	5 50.20	303	30	10.0	6.6	III	45.260	6 5 59.82	17 32 13.76	17 1385
113	9.1	10.8	12.7	15.0	17.1	19.2	c	6 14.96	303	30	"	"	V C	47.980	6 6 24.57	17 37 49.12	17 1387
114	9.0	9.0	11.3	13.5	15.6	17.7	c	8 13.42	303	50	10.0	6.5	III	43.480	6 8 23.08	17 12 47.71	17 1399
115	8.9	43.0	45.0	47.1	49.4	51.6	c	9 47.22	304	26	10.0	6.1	III	47.180	6 9 56.95	16 35 35.38	16 1407
116	8.0	7.0	9.0	11.2	13.4	15.6	c	10 11.24	304	38	10.0	6.1	III	47.530	6 10 21.00	16 23 28.15	16 1409
117	7.8	45.5	47.6	49.5	51.3	53.6	a	11 19.50	304	2	10.0	5.5	I	46.660	6 11 29.19	16 59 46.07	16 1413
118	9.2	19.8	22.0	24.0	26.2	28.3	c	11 24.06	304	2	"	"	III C	51.000	6 11 33.74	17 4 50.58	17 1418
119	8.6	44.6	46.7	48.9	51.0	53.3	c	12 48.90	304	2	"	"	III	52.670	6 12 58.60	16 57 52.80	16 1424
120	8.5	3.3	5.4	7.6	9.8	11.9	c	14 7.60	304	42	10.0	6.0	III B	44.580	6 14 17.37	−16 23 39.35	−16 1432
121	9.0	32.2	34.5	36.6	38.8	41.0	c	14 36.62	304	42	"	"	III A	42.300	6 14 46.40	−16 17 54.56	−16 1437
122	9.0	32.9	35.0	36.8	.....	41.0	a	16 7.03	303	(14)	10.0	6.0	III B	43.790	6 16 16.65	17 52 0.38	17 1452
123	9.1	12.4	14.6	16.6	18.9	21.0	c	16 16.70	303	(14)	"	"	III C	39.075	6 16 26.31	17 56 43.88	17 1455
124	8.9	51.2	53.5	55.5	57.5	59.2	e	16 25.34	303	(14)	"	"	VII A	38.480	6 16 34.97	17 47 16.47	17 1457
125	3.	3.6	5.8	8.1	10.1	12.4	c	18 8.00	303	(14)	"	"	III B	36.470	6 18 17.62	17 54 21.64	17 1467
126	7.8	0.5	2.7	4.8	7.0	9.2	c	19 4.84	304	42	10.0	6.9	V B	40.800	6 19 14.64	16 24 54.81	16 1461
127	8.8	45.0	47.0	49.2	51.5	53.6	c	20 49.26	304	42	"	"	III	45.730	6 20 59.07	16 20 5.97	16 1475
128	8.6	14.3	16.5	18.7	20.9	23.0	c	21 18.68	304	10	10.0	6.0	V	49.580	6 21 28.44	16 50 55.87	16 1478
129	8.5	18.0	20.1	22.4	24.5	26.7	c	22 22.34	304	10	"	"	III B	42.660	6 22 32.09	16 56 21.06	16 1486
130	7.9	57.0	59.1	1.3	3.4	5.6	c	25 1.28	304	10	"	"	III B	41.670	6 25 11.05	−16 56 41.04	−16 1500
131	8.2	42.8	45.0	47.1	49.4	51.6	c	25 47.18	304	10	"	"	III	44.950	6 25 56.96	−16 52 25.05	−16 1504
132	9.1	14.9	17.0	19.1	21.5	23.6	c	26 19.22	303	2	10.0	5.8	V C	44.800	6 26 28.87	18 6 59.70	18 1455
133	7.5	17.3	19.6	21.8	24.0	26.2	c	27 21.78	303	2	"	"	III	48.290	6 27 31.44	17 59 25.65	17 1521
134	9.2	47.3	49.6	51.7	53.9	56.0	c	27 51.70	303	2	"	"	III	47.070	6 28 1.37	17 59 49.25	17 1526
135	8.6	45.0	47.2	49.4	51.6	53.6	c	28 49.36	303	2	"	"	III	46.340	6 28 59.03	18 0 3.62	17 1533
136	9.3	56.9	59.0	1.1	3.6	5.7	c	29 1.26	303	2	"	"	V B	43.490	6 29 10.92	18 4 13.28	18 1466
137	9.1	14.3	16.4	18.7	20.9	22.9	c	30 18.64	303	2	"	"	III A	46.140	6 30 28.32	17 56 52.58	17 1542
138	9.0	46.8	48.8	50.7	52.4	54.8	a	31 20.66	304	14	10.0	5.7	III A	50.740	6 31 30.48	16 43 20.43	16 1537
139	7.8	32.8	34.9	36.7	38.5	40.9	a	33 6.76	304	14	"	"	I (C)	42.740	6 33 16.57	16 55 34.96	16 1546
140	5.	15.4	17.7	19.9	22.1	24.2	c	33 19.86	302	58	10.0	5.9	III B	40.900	6 33 29.54	−18 9 3.24	−18 1492
141	8.0	55.6	57.5	59.5	1.4	3.8	a	34 29.75	302	58	"	"	I	40.960	6 34 39.45	−18 5 47.64	−18 1498
142	9.3	42.8	44.8	47.1	49.2	51.5	c	34 47.08	303	34	10.0	5.7	III A	41.180	6 34 56.85	17 26 27.54	17 1573
143	9.2	17.0	19.3	21.4	23.3	25.2	e	34 51.26	303	34	"	"	V A	38.770	6 35 1.03	17 27 15.35	17 1574
144	8.8	16.1	18.2	20.2	22.5	24.8	c	37 20.36	302	58	10.0	6.9	V C	46.300	6 37 30.06	−18 10 34.68	−18 1513

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° '	"	"		r	h m s	° ' "	°
145	8.9	44.3	46.3	48.7	50.9	53.1	c	37 48.66	302 58	10.0	6.9	V C	43.800	6 37 58.36	−18 11 22.83	−18 1517
146	9.1	36.5	38.6	41.0	43.3	45.4	c	38 40.96	302 58	"	"	III B	47.370	6 38 50.68	18 7 0.49	18 1522
147	9.0	2.6	4.8	7.0	9.1	11.3	c	39 6.96	302 58	"	"	V	43.955	6 39 16.68	18 4 54.22	18 1524
148	8.9	34.9	37.1	38.9	40.8	43.1	a	40 9.13	302 58	"	"	I A	46.980	6 40 18.87	18 0 38.05	17 1604
149	9.1	11.5	13.8	15.9	18.1	20.4	c	40 15.94	302 58	"	"	III B	44.900	6 40 25.66	18 7 48.50	18 1536
150	6.5	31.7	34.0	36.1	38.3	40.5	c	40 36.12	302 58	"	"	V C	48.740	6 40 45.84	−18 9 49.02	−18 1538
151	9.3	55.7	57.8	0.0	2.3	4.5	c	42 0.06	302 58	"	"	III B	42.770	6 42 9.79	−18 8 30.00	−18 1548
152	8.0	29.0	31.0	33.2	35.5	37.7	c	43 33.28	303 54	10.0	5.9	III A	39.250	6 43 43.13	17 7 6.52	17 1631
153	8.6	8.7	10.8	13.0	15.3	17.5	c	44 13.06	303 54	"	"	III	43.600	6 44 22.91	17 8 58.69	17 1634
154	9.1	3.5	5.5	7.4	9.3	11.6	a	45 37.48	303 54	"	"	I	46.800	6 45 47.35	17 7 56.25	17 1644
155	7.0	35.6	37.8	39.9	42.2	44.4	c	45 39.98	303 54	"	"	III B	48.940	6 45 49.84	17 10 30.04	17 1645
156	8.9	7.7	9.7	11.9	14.2	16.4	c	46 11.98	303 54	"	"	III B	46.970	6 46 21.85	17 11 8.06	17 1649
157	8.5	45.8	47.7	49.6	51.6	53.8	a	47 19.72	303 54	"	"	I	48.150	6 47 29.60	17 7 30.95	17 1654
158	9.3	21.2	24.3	26.5	28.8	31.0	c	47 26.56	303 54	"	"	III B	49.210	6 47 36.43	17 10 25.49	17 1656
159	9.4	17.9	19.9	22.2	24.3	26.6	c	48 22.18	303 54	"	"	III B	47.920	6 48 32.06	17 10 50.61	17 1661
160	9.1	37.9	40.1	42.3	44.6	46.7	c	52 42.32	302 56	10.0	6.1	III	44.790	6 52 52.13	−18 6 42.34	−18 1613
161	8.9	34.8	36.9	39.1	41.3	43.5	c	53 39.12	303 6	10.0	6.1	III	47.060	6 53 48.95	−17 55 58.51	−17 1706
162	8.7	7.2	9.4	11.5	13.8	16.0	c	54 11.58	303 32	10.0	6.0	V	47.730	6 54 21.46	17 29 45.64	17 1709
163	9.3	47.1	49.1	51.3	53.6	55.7	c	55 51.36	304 0	10.0	6.5	III	48.425	6 56 1.30	17 1 29.65	16 1704
164	9.4	46.5	48.7	50.5	52.4	54.6	[illegible]	57 20.47	304 28	10.0	6.8	I (A)	46.450	6 57 30.47	16 30 49.18	16 1715
165	7.8	22.1	24.3	26.4	28.7	30.8	c	57 26.46	304 28	"	"	III C	50.920	6 57 36.45	16 39 6.79	16 1716
166	7.5	6.2	8.4	10.5	12.7	15.0	c	58 10.56	304 28	"	"	III	49.265	6 58 20.57	16 33 12.58	16 1723
167	9.2	32.2	34.5	36.6	38.8	41.0	c	58 36.62	304 28	"	"	III	46.710	6 58 46.63	16 34 1.78	16 1729
168	9.3	49.9	52.1	54.1	56.5	58.5	c	58 54.22	304 28	"	"	V B	46.570	6 59 4.23	16 37 19.42	16 1732
169	8.5	52.4	54.5	56.7	58.9	1.1	c	0 56.72	304 28	"	"	III A	41.390	7 1 6.75	16 32 29.31	16 1753
170	9.2	41.3	43.3	45.2	47.1	49.4	a	2 15.20	304 28	"	"	I	42.110	7 2 25.23	−16 35 29.82	−16 1769
171	9.0	17.5	19.6	21.8	24.0	26.3	c	2 21.84	304 28	"	"	III C	42.290	7 2 31.86	−16 41 54.19	−16 1774
172	9.2	......	32.9	35.0	37.4	39.4	c	2 35.09	304 28	"	"	V C	46.540	7 2 45.11	16 40 33.83	16 1777
173	9.3	57.0	58.9	1.1	3.3	5.5	c	3 1.16	304 28	"	"	V	50.160	7 3 11.20	16 32 58.45	16 1782
174	9.1	5.1	7.4	9.5	11.8	13.9	c	4 9.54	303 2	10.0	6.8	III C	46.370	7 4 19.43	18 6 41.66	18 1701
175	8.0	18.6	20.7	22.9	27.1	28.8	c_3 d_2	4 18.52	303 2	"	"	VI	(42).770	7 4 28.42	18 1 26.47	17 1801
176	9.0	23.9	25.6	29.8	32.0	34.1	b_2 c_3	5 34.17	303 2	"	"	III B	46.700	7 5 44.07	18 3 22.86	17 1815
177	9.1	36.6	38.7	40.9	43.2	45.4	c	5 40.96	303 2	"	"	V	45.770	7 5 50.87	18 0 28.78	17 1819
178	8.9	29.9	32.1	34.4	36.6	38.7	c	9 34.34	303 14	10.0	5.5	III	49.040	7 9 44.30	17 47 25.95	17 1864
179	8.0	30.6	32.6	34.6	37.0	39.1	c	11 34.78	303 54	10.0	5.6	V	49.850	7 11 44.83	17 7 10.01	17 1884
180	9.0	1.9	4.0	5.9	7.9	10.2	a	11 36.01	303 54	"	"	I B	44.220	7 11 46.05	−17 12 8.32	−17 1883
181	8.8	36.6	38.7	40.9	43.1	45.3	c	12 40.92	303 54	"	"	III B	50.470	7 12 50.97	−17 10 10.48	−17 1894
182	9.1	3.3	5.5	7.2	9.2	11.5	a	13 37.38	303 54	"	"	I C	49.770	7 13 47.43	17 13 35.81	17 1907
183	9.1	32.7	34.8	37.1	39.2	41.2	c	18 37.00	303 34	10.0	6.7	V	42.765	7 18 47.06	17 29 29.08	17 1948
184	9.0	5.3	7.4	9.5	11.7	13.8	c	19 9.54	303 34	"	"	V B	45.270	7 19 19.60	17 31 54.71	17 1954
185	8.7	22.6	24.7	27.0	29.2	31.4	c	21 26.98	302 54	10.0	6.5	III	41.870	7 21 37.00	18 9 48.46	18 1831
186	8.0	37.0	39.2	41.2	43.6	45.7	c	24 41.34	303 56	10.0	6.4	III	40.280	7 24 51.49	17 8 16.35	17 1996
187	9.3	11.6	13.9	15.7	17.6	19.7	a	25 45.73	303 56	"	"	III B	45.260	7 25 55.89	17 9 54.43	17 2005
188	8.6	50.4	52.6	54.7	57.0	59.1	c	25 54.76	303 56	"	"	III	44.920	7 26 4.92	−17 6 47.68	−17 2006

Reduction Elements. Zone 157.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 27.4....	−0.034	+0.097	−0.199	−0.020	+0.111	−0.199
27.6....	−0.007	+0.125				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	τ⁶ Eridani		γ Eridani		Lalande 7685		60 Eridani		19 Canis Majoris		29 Canis Majoris	
	° ' "		° ' "		° ' "		° ' "		° ' "		° ' "	
CIRCLE READING.	297 28 8.05		307 14 8.00		302 42 8.25		304 38 8.50		301 2 8.00		296 42 7.85	
	r	' "	r	' "	r	' "	r	' "	r	' "	r	' "
I Microm. Eq......	48.480	6 45.12	44.070	5 18.33	46.220	6 1.27	45.860	5 54.25	45.630	5 50.23		4 17.98
II Red. to Mer......	.550	0.23	.100	0.14	.240	0.18	.910	0.16	.700	0.20	40.840	0.21
VI Inclination	.700			1.68	.410		46.025		.825		.970	−0.67
VII Refraction.......	.710	1 56.3		1 19.8	.425	1 34.4	.035	1 27.7	.835	1 40.8	41.005	2 0.8

	Piazzi VII. 85		Piazzi VII. 116	
	° ' "		° ' "	
CIRCLE READING.	312 16 8.30		309 42 8.25	
	r	' "	r	' "
I Microm. Eq......	41.460	4 30.04	42.470	4 49.44
II Red. to Mer.	.505	0.09	.530	0.11
VI Inclination	.630		.655	
VII Refraction.......	.670	1 7.1	.655	1 13.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
τ^6 Eridani	3 42 23.83	11	− 0.16	+0.31	297 32 57.1	14.3
γ Eridani	3 53 11.86	11	− 0.12	+0.30	307 18 8.4	15.1
Lalande 7685	4 1 58.53	11	− 0.13	+0.34	302 46 35.3	16.3
60 Eridani	4 45 31.47	11	− 0.13	+0.47	304 42 35.2	16.8
19 Canis Majoris	6 51 7.64	11	− 0.14	+0.50	301 6 17.6	17.2
29 Canis Majoris	7 14 21.20	11	− 0.16	+0.57	296 44 24.6	17.0
Piazzi VII. 85	7 17 3.48	11	− 0.09	+0.44	312 19 31.3	16.3
Piazzi VII. 116	7 22 58.93	11	− 0.10	+0.47	309 45 44.4	16.3
λ Ursae Minoris S. P.	7 26 3.84	4	−11.54	[+0.51]	52 6	....

h		s
4.098	dt	+0.355
	Hourly rate	+0.0453
		° ′ ″
	Adopted Equator Point	301 6 16.16

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 45	30.324	34.9	33.7
4 30	30.320	35.6	33.8
5 30	30.314	34.9	33.7
6 32	30.318	34.4	33.7
7 30	30.316	33.7	31.6

Notes.

185. Faint companion, n. f. Piazzi VII. 116. Images steady; seeing good.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				D = Z. D. N. to 1895.0				R			
			302°	303°	304°	305°	302°	303°	304°	305°	302° 30′	303°	304°	305°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
303	−0.133	3 30	.....	+9.410	+9.505	+9.599	.....	−20.37	−20.48	−20.58	95.46	93.65	90.20	86.90
304	0.129	4 0	.....	9.268	9.368	9.469	.....	19.57	19.63	19.69	95.46	93.65	90.20	86.90
305	−0.125	4 30	.....	9.175	9.281	9.387	.....	18.48	18.49	18.50	95.43	93.63	90.18	86.88
		5 0	.....	9.136	9.245	9.353	.....	17.13	17.11	17.08	95.43	93.63	90.18	86.88
		5 30	.....	9.150	9.260	9.368	.....	15.55	15.49	15.42	95.43	93.63	90.18	86.88
		6 0	.....	9.216	9.326	9.435	.....	13.75	13.64	13.53	95.43	93.63	90.18	86.88
		6 30	+9.227	9.335	9.442	9.550	−11.92	11.77	11.62	11.46	95.46	93.65	90.20	86.90
		7 0	9.401	9.504	9.606	9.709	9.83	9.64	9.46	9.27	95.68	93.86	90.41	87.10
		7 30	+9.624	+9.722	+9.818	+9.913	− 7.63	− 7.42	− 7.20	− 6.98	95.90	94.08	90.62	87.30

1895 DECEMBER 2. ZONE 158. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	■		m s	° ′	″	″		r	h m s	° ′ ″	°
1	8.5	52.0	53.9	55.7	57.6	0.0	a	4 25.79	304 20	10.0	7.8	I A	38.870	4 4 35.16	−16 40 6.82	−16 793
2	6.0	31.6	33.9	36.0	38.1	40.3	c	4 35.98	304 20	"	"	III A	42.550	4 4 45.35	16 38 57.96	16 796
3	9.2	5.5	7.4	9.7	12.0	14.1	c	5 9.74	304 20	"	"	III C	45.670	4 5 19.10	16 47 39.88	16 797
4	8.9	53.7	55.9	58.0	0.3	2.4	c	12 58.06	305 0	10.0	6.2	III	45.820	4 13 7.47	16 1 12.32	16 829
5	9.4	57.1	1.6	3.9	5.7	10.4	c_1 d_1	15 1.59	304 38	10.0	6.4	III B	45.500	4 15 10.95	16 26 33.49	16 834
6	8.4	34.6	36.8	38.9	41.2	43.3	c	15 38.96	304 38	"	"	III	49.590	4 15 48.32	16 22 1.93	16 839
7	8.9	39.7	42.0	44.0	46.1	48.3	c	16 44.02	305 40	10.0	8.0	III	49.450	4 16 53.48	15 20 1.10	15 769
8	9.3	16.3	18.5	20.6	22.9	24.9	c	23 20.64	305 34	10.0	7.3	III C	44.100	4 23 30.06	15 34 12.98	15 793
9	7.5	49.6	51.8	53.8	55.7	57.5	e	23 24.00	305 34	"	"	VII A	45.230	4 23 33.44	15 24 12.55	15 794
10	8.8	24.2	26.3	28.0	30.0	32.3	a	25 58.09	304 28	10.0	7.0	I A	47.975	4 26 7.41	−16 29 19.75	−16 877
11	8.8	57.8	59.8	1.9	4.1	6.3	c	26 1.98	304 28	"	"	III C	44.630	4 26 11.28	−16 40 7.27	−16 878
12	9.2	......	31.3	33.1	35.2	37.0	e	26 3.26	304 28	"	"	VII C	42.775	4 26 12.56	16 40 45.01	16 879
13	9.5	45.4	47.4	49.3	51.3	53.5	a	32 19.12	305 48	10.0	6.9	I	46.330	4 32 28.56	15 13 5.21	15 822
14	8.0	42.0	44.1	46.3	48.6	50.6	c	32 46.32	304 28	10.0	7.1	III	44.520	4 32 55.61	16 33 45.58	16 905
15	7.8	26.7	28.7	31.0	33.3	35.5	c	33 31.04	304 6	10.0	7.4	III	45.360	4 33 40.29	16 55 30.73	17 921
16	8.7	18.3	20.6	22.6	24.8	26.9	c	34 22.64	305 36	10.0	7.0	III	47.650	4 34 32.06	15 24 42.69	15 830
17	......	51.0	53.2	55.4	57.6	1.9	c_2 d_1	34 53.25	305 12	10.0	7.0	V B	40.520	4 35 2.61	15 54 15.73	15 833
18	9.3	57.0	59.1	1.3	3.4	5.7	c	36 1.30	305 12	"	"	V	48.340	4 36 10.66	15 48 32.59	15 837
19	8.5	10.1	12.1	14.2	16.6	18.6	c	38 14.32	305 30	10.0	6.4	III	45.500	4 38 23.72	15 31 25.94	15 845
20	8.9	19.7	21.9	24.0	26.2	28.4	c	41 24.04	304 20	10.0	6.5	III	44.415	4 41 33.30	−16 41 51.48	−16 944
21	9.1	55.6	57.6	59.7	2.0	4.1	c	41 59.80	304 20	"	"	III B	44.370	4 42 9.05	−16 45 5.83	−16 945
22	5.5	19.5	21.4	23.2	25.0	27.5	a	43 53.25	304 32	10.0	7.4	I	42.650	4 44 2.53	16 30 23.64	16 956
23	8.3	59.8	1.7	3.5	5.5	7.9	a	44 33.52	305 6	10.0	6.9	I A	41.340	4 44 42.86	15 53 31.95	15 868
24	8.8	23.9	26.1	27.9	29.9	32.2	a	44 57.85	305 6	"	"	I B	45.230	4 45 7.18	15 58 46.09	16 960
25	9.3	59.5	1.5	3.8	6.1	8.1	c	45 3.80	305 6	"	"	III	47.550	4 45 13.14	15 54 50.05	15 872
26	6.0	22.0	24.1	26.3	28.5	30.6	c	45 26.30	305 6	"	"	V B	46.060	4 45 35.63	15 58 33.62	16 963
27	9.1	53.2	55.4	57.6	59.8	1.8	c	46 57.56	305 10	10.0	7.2	III B	39.830	4 47 6.89	15 56 31.87	16 972
28	9.0	16.4	18.6	20.7	23.0	25.1	c	48 20.76	305 10	"	"	III	48.610	4 48 30.10	15 50 30.55	15 887
29	8.9	34.7	36.9	39.0	41.3	43.3	c	50 39.04	305 30	10.0	6.9	III	46.450	4 50 48.42	15 31 12.02	15 897
30	9.1	57.6	59.6	1.8	4.1	6.2	c	51 1.86	305 30	"	"	III B	46.870	4 51 11.22	−15 34 17.37	−15 899

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
31	8.0	40.8	43.0	45.0	47.3	49.3	c	51 45.08	305	30	10.0	6.9	III	42.950	4 51 54.46	−15 32 19.61	−15 904
32	7.0	28.5	30.6	32.8	35.0	37.1	c	53 32.80	304	10	10.0	7.3	III B	41.630	4 53 42.02	16 56 2.86	17 1001
33	9.1	38.5	40.6	42.8	45.1	47.2	c	53 42.84	304	10	"	"	V	45.860	4 53 52.06	16 51 29.78	16 1007
34	9.0	4.0	6.1	8.3	10.5	12.6	c	55 8.30	305	30	10.0	7.4	III	44.960	4 55 17.66	15 31 42.03	15 917
35	8.2	40.4	42.6	44.8	47.0	49.0	c	55 44.76	304	48	10.0	7.2	III	42.170	4 55 54.05	16 14 38.05	16 1024
36	9.3	27.6	29.7	31.6	33.5	35.7	a	58 1.42	305	24	10.0	7.0	I	44.930	4 58 10.77	15 37 42.64	15 928
37	8.8	11.9	14.1	16.3	18.4	20.6	c	58 16.26	305	0	10.0	7.4	III	47.680	4 58 25.57	16 0 52.51	16 1027
38	9.0	13.3	15.4	17.7	19.9	22.0	c	0 17.66	304	52	10.0	6.8	III	48.490	5 0 26.96	16 8 38.43	16 1034
39	8.9	26.8	28.9	31.0	33.1	35.3	c	1 31.02	305	26	10.0	6.5	III	49.150	5 1 40.38	15 34 24.63	15 944
40	8.6	40.5	42.7	44.8	47.1	49.2	c	4 44.86	305	14	10.0	7.1	III	46.050	5 4 54.19	−15 47 25.63	−15 953
41	9.5	33.0	35.0	37.2	39.5	41.6	c	5 37.26	305	14	"	"	III A	41.900	5 5 46.59	−15 45 30.20	−15 960
42	8.7	48.7	50.9	53.3	55.5	57.5	c	5 53.18	305	14	"	"	V	37.860	5 6 2.50	15 50 4.59	15 962
43	8.8	34.2	36.5	38.7	41.0	43.0	c	6 38.68	305	14	"	"	V B	44.470	5 6 48.00	15 51 11.51	15 963
44	9.1	33.8	36.0	38.0	40.4	42.5	c	7 38.14	305	14	"	"	III A	44.790	5 7 47.47	15 44 35.48	15 969
45	9.1	32.6	34.8	36.9	39.2	41.3	c	8 36.96	305	14	"	"	III B	48.575	5 8 46.28	15 49 51.93	15 974
46	8.4	26.9	29.1	31.4	33.5	35.5	c	9 31.28	305	14	"	"	III A	41.360	5 9 40.61	15 45 42.04	15 977
47	9.2	55.1	57.3	59.5	1.6	3.7	c	10 59.44	305	34	10.0	7.2	III	41.825	5 11 8.80	15 28 47.98	15 988
48	9.0	28.9	30.9	33.2	35.5	37.5	c	11 33.20	305	34	"	"	III	47.130	5 11 42.56	15 27 6.39	15 989
49	9.5	46.8	49.0	50.8	52.7	54.9	a	13 20.75	304	44	10.0	7.1	I B	42.255	5 13 30.02	16 21 54.81	16 1093
50	9.0	22.4	24.6	26.8	28.9	31.2	c	13 26.78	304	44	"	"	III	42.270	5 13 36.05	−16 18 42.98	−16 1095
51	8.0	57.0	59.1	1.2	3.1	5.0	e	13 31.28	304	44	"	"	V	45.640	5 13 40.55	−16 17 39.69	−16 1096
52	8.8	14.9	16.9	19.1	21.4	23.6	c	15 19.18	305	4	10.0	7.5	III	48.100	5 15 28.49	15 56 50.56	15 1016
53	9.2	53.7	55.7	57.6	59.5	1.8	a	19 27.54	304	52	10.0	7.5	I	47.690	5 19 36.83	16 8 59.06	16 1127
54	9.1	43.0	45.1	47.2	49.3	51.5	c	19 47.22	305	4	10.0	7.2	III	43.210	5 19 56.53	15 58 26.26	16 1130
55	9.1	23.0	25.0	27.2	29.4	31.4	c	20 27.20	305	4	"	"	III A	39.780	5 20 36.51	15 56 16.91	15 1033
56	8.2	57.9	0.0	2.2	4.4	6.6	c	21 2.22	305	4	"	"	III B	39.520	5 21 11.52	16 2 50.82	16 1139
57	9.2	15.6	17.7	19.9	22.1	24.2	c	21 19.90	305	4	"	"	VI	41.180	5 21 29.21	15 59 7.69	16 1140
58	9.0	0.1	2.1	4.3	6.5	8.6	c	25 4.32	305	0	10.0	6.8	V A	43.080	5 25 13.63	15 59 17.22	16 1152
59	9.4	11.6	13.7	15.6	17.7	19.3	e	25 45.82	305	0	"	"	VII	45.060	5 25 55.12	16 1 55.84	16 1156
60	8.5	24.0	26.0	28.2	30.4	32.5	c	27 28.22	305	28	11.4	8.6	III B	40.500	5 27 37.57	−15 38 31.74	−15 1072
61	9.0	44.3	46.5	48.7	50.8	53.0	c	27 48.66	305	28	"	"	V	44.880	5 27 58.02	−15 33 55.88	−15 1076
62	9.0	43.1	45.3	47.4	49.5	51.6	c	28 47.38	305	6	10.0	7.1	V	46.200	5 28 56.70	15 55 33.51	15 1080
63	9.0	28.1	30.3	32.4	34.5	36.7	c	31 32.40	305	20	10.0	7.5	III B	50.700	5 31 41.74	15 43 19.19	15 1093
64	9.1	10.9	13.1	15.2	17.4	19.5	c	32 15.22	305	20	"	"	III	48.990	5 32 24.57	15 40 38.98	15 1099
65	8.5	29.2	31.2	33.3	35.6	37.7	c	34 33.40	304	52	10.0	7.5	III	49.470	5 34 42.70	16 8 32.10	16 1194
66	9.1	38.7	40.8	43.0	45.1	47.1	c	35 42.94	304	52	"	"	III	47.640	5 35 52.24	16 9 7.67	16 1200
67	8.7	0.0	2.4	4.5	6.7	8.9	c	36 4.50	304	52	"	"	III B	50.220	5 36 13.80	16 11 31.59	16 1202
68	8.9	2.3	4.6	6.6	8.9	11.0	c	37 6.68	304	52	"	"	III	41.670	5 37 15.98	16 11 2.78	16 1209
69	9.3	32.7	35.0	37.1	39.3	41.5	c	37 37.12	304	52	"	"	III B	46.810	5 37 46.42	16 12 37.61	16 1213
70	9.3	32.1	34.3	36.1	37.9	40.1	a	39 5.92	305	14	10.0	7.4	I A	44.190	5 39 15.27	15 44 56.94	−15 1136
71	9.2	40.5	42.8	44.9	46.7	48.4	e	39 14.93	305	14	"	"	VII B	44.670	5 39 24.27	−15 51 21.06	−15 1139
72	9.0	22.9	24.9	27.1	29.4	31.7	c	39 27.20	305	14	"	"	III B	42.740	5 39 36.54	15 51 55.30	15 1140
73	9.3	6.0	8.1	9.9	12.2	13.7	e	39 40.25	305	14	"	"	VII(B)	49.110	5 39 49.59	15 49 56.01	15 1143
74	8.4	59.1	1.0	3.3	5.6	7.6	c	41 3.32	305	14	"	"	V C	44.890	5 41 12.65	15 54 28.71	15 1154
75	8.9	42.3	44.6	46.5	48.5	50.2	e	41 16.69	305	14	"	"	V B	48.800	5 41 26.03	15 50 1.21	15 1157
76	8.6	50.8	52.7	54.9	56.8	58.6	e	41 25.02	305	14	"	"	VII C	49.470	5 41 34.36	15 53 1.91	15 1158
77	9.1	13.7	15.8	18.0	20.3	22.4	c	45 18.04	304	36	10.0	7.1	III	44.040	5 45 27.32	16 26 21.40	16 1265
78	8.6	45.0	47.1	49.2	51.4	53.7	c	45 49.28	304	48	10.0	7.5	III	45.150	5 45 58.59	16 13 59.46	16 1269
79	9.0	44.9	47.1	49.2	51.5	53.6	c	47 49.26	305	10	10.0	7.1	III	44.550	5 47 58.61	15 52 10.76	15 1198
80	8.8	42.2	44.4	46.6	48.6	50.5	c	48 46.46	304	44	10.0	7.1	III	42.265	5 48 55.76	−16 18 56.36	−16 1291
81	8.0	53.5	55.6	57.7	2.2	3.7	c_3 d_2	48 53.49	304	44	"	"	V	48.420	5 49 2.80	−16 16 59.62	−16 1292
82	8.3	14.9	16.9	19.2	21.3	23.5	c	51 19.16	305	6	10.0	7.1	III	47.090	5 51 28.51	15 55 23.53	15 1219
83	9.2	11.9	14.2	16.2	18.3	20.5	c	56 16.22	305	30	10.0	6.5	III C	47.375	5 56 25.61	15 37 45.17	15 1244
84	8.5	45.8	47.9	50.0	52.2	54.4	c	56 50.06	305	30	"	"	III	43.890	5 56 59.46	15 32 26.05	15 1248
85	7.5	59.8	2.1	4.2	8.4	10.0	c_3 d_2	56 59.87	305	30	"	"	V B	44.730	5 57 9.28	15 35 24.83	15 1249
86	8.1	35.8	38.0	40.0	42.4	44.5	c	58 40.14	305	0	10.0	6.6	III	44.130	5 58 49.49	16 2 23.68	16 1343
87	9.2	30.4	32.6	34.8	37.0	39.1	c	59 34.78	305	0	"	"	III C	44.970	5 59 44.12	16 8 34.11	16 1344
88	9.3	18.1	19.9	21.9	23.9	26.1	a	0 51.86	305	0	"	"	I C	44.970	6 1 1.21	16 8 33.21	16 1351
89	8.3	8.5	10.6	12.8	15.0	17.0	c	1 12.78	304	48	10.0	7.2	III	46.600	6 1 22.12	16 13 37.54	16 1353
90	8.5	59.8	1.9	4.1	6.4	8.5	c	2 4.14	304	48	"	"	III	42.210	6 2 13.48	−16 15 2.12	−16 1359
91	8.0	23.8	25.9	28.0	30.3	32.4	c	3 28.08	305	10	10.0	7.0	III	41.740	6 3 37.46	−15 53 10.59	−15 1275
92	9.0	42.4	44.7	46.8	48.9	51.3	c	4 46.82	304	48	10.0	7.5	III	47.660	6 4 56.17	16 13 18.38	16 1375
93	9.5	37.2	39.0	41.1	43.6	45.9	c	5 41.36	304	48	"	"	III	46.060	6 5 50.74	16 13 49.40	16 1381
94	9.2	52.1	54.3	56.4	58.7	0.7	c	6 56.44	304	48	"	"	III B	45.850	6 7 5.79	16 17 7.23	16 1389
95	9.0	8.5	10.5	12.3	14.0	16.6	a	8 42.25	304	56	10.0	6.6	I	43.440	6 8 51.62	16 6 39.30	16 1400
96	9.3	40.3	42.4	44.3	46.6	49.0	c	8 44.52	304	56	"	"	III	46.230	6 8 53.90	16 5 47.31	16 1401
97	8.9	4.9	7.0	9.0	11.3	13.5	c	10 9.14	304	56	"	"	III B	42.190	6 10 18.51	16 10 18.68	16 1408
98	8.9	26.9	29.0	31.2	33.4	35.5	c	11 31.20	304	56	"	"	III C	41.040	6 11 40.57	16 13 54.17	16 1414
99	......	11.5	13.1	15.8	30.8	......	d_1 e_2	13 2.93	304	56	"	"	VI C	45.250	6 13 12.31	16 12 35.60	16 1425
100	8.6	4.1	6.3	8.2	10.2	12.1	e	13 38.46	305	16	10.0	6.9	VII	44.960	6 13 47.89	−15 46 14.79	15 1337

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
101	9.3	17.8	19.5	21.6	23.4	25.5	a	15 51.42	304 56	10.0	6.9	I	50.030	6 16 0.82	−16 4 35.30	−16 1440
102	9.0	52.4	54.7	56.7	59.0	0.0	c	15 56.72	304 56	"	"	V	47.070	6 16 6.12	16 5 35.03	16 1441
103	8.9	38.5	40.5	42.6	44.8	47.1	c	16 42.70	304 56	"	"	V B	45.380	6 16 52.10	16 9 21.25	16 1447
104	8.7	27.2	29.4	31.4	33.8	35.8	c	17 31.52	304 30	10.0	7.3	V	42.440	6 17 40.88	16 33 5.70	16 1454
105	8.6	37.2	39.2	41.4	43.5	45.7	c	18 41.40	305 12	10.0	6.8	III	42.200	6 18 50.83	15 51 7.35	15 1366
106	8.9	26.1	28.3	30.4	32.7	34.8	c	21 30.46	305 32	10.0	6.7	III B	43.310	6 21 39.94	15 33 59.37	15 1382
107	9.3	17.1	19.5	21.5	23.7	25.9	c	24 21.54	305 20	10.0	6.0	III C	48.020	6 24 31.00	15 47 43.95	15 1399
108	9.3	35.5	37.6	39.7	41.8	44.0	c	25 39.72	305 20	"	"	III	46.085	6 25 49.20	15 41 55.32	15 1408
109	9.3	9.2	11.3	13.4	15.5	17.4	e	25 43.65	305 20	"	"	VII A	42.130	6 25 53.13	15 39 58.67	15 1409
110	8.3	14.3	16.5	18.7	20.8	23.0	c	27 18.66	305 38	10.0	7.4	III	44.340	6 27 28.18	−15 24 27.77	−15 1416
111	8.8	39.8	42.0	44.2	46.4	48.6	c	28 44.20	305 38	"	"	III B	44.730	6 28 53.72	−15 27 34.10	−15 1427
112	8.7	34.4	36.5	38.3	40.1	42.5	a	33 8.19	305 10	10.0	6.8	I	47.520	6 33 17.68	15 51 29.28	15 1459
113	8.8	42.0	44.0	45.8	47.6	50.0	a	34 15.70	305 10	"	"	I	43.290	6 34 25.19	15 52 50.66	15 1463
114	8.8	19.3	21.3	23.5	25.7	27.9	c	34 23.54	304 40	10.0	8.0	III	48.100	6 34 32.98	16 21 20.98	16 1559
115	8.0	35.5	37.6	39.8	41.9	44.1	c	35 39.78	304 40	"	"	III	42.550	6 35 49.23	16 23 7.97	16 1563
116	7.5	16.4	18.4	20.6	22.9	24.9	c	37 20.64	305 10	10.0	7.5	III B	47.760	6 37 30.14	15 54 40.51	15 1478
117	9.3	11.7	14.0	16.1	18.4	20.5	c	41 16.14	305 10	"	"	III A	42.540	6 41 25.67	15 49 53.36	15 1502
118	9.3	52.7	54.7	56.9	59.1	1.4	c	41 56.96	305 10	"	"	III C	44.370	6 42 6.48	15 59 0.12	15 1507
119	8.0	30.9	33.0	35.2	37.5	39.6	c	42 35.24	305 10	"	"	V C	49.260	6 42 44.76	15 57 27.64	15 1511
120	9.0	28.2	30.3	32.5	34.6	36.7	c	49 32.46	305 32	10.0	6.2	III	52.160	6 49 42.08	−15 28 6.55	−15 1556
121	8.0	27.3	29.4	31.6	33.7	36.0	c	50 31.60	305 32	"	"	III C	52.280	6 50 41.20	−15 34 31.83	−15 1560
122	8.8	12.2	14.4	16.6	18.8	20.8	c	51 16.56	305 32	"	"	V C	43.935	6 51 26.16	15 37 12.41	15 1564
123	8.5	55.9	57.9	59.7	1.5	4.0	a	52 29.59	305 32	"	"	I C	45.690	6 52 39.20	15 36 36.63	15 1573
124	8.2	39.5	41.6	43.8	46.1	48.2	c	52 43.84	304 50	10.0	7.0	III B	46.560	6 52 53.38	16 15 10.35	16 1673
125	8.2	52.1	54.1	56.3	58.5	0.6	c	53 56.32	304 50	"	"	III	50.530	6 54 5.88	16 10 41.26	16 1685
126	8.6	25.7	27.9	30.0	32.3	34.5	c	55 30.08	304 50	"	"	III	49.740	6 55 39.65	16 10 56.99	16 1701
127	9.1	15.5	17.6	19.8	22.0	24.2	c	56 19.82	304 50	"	"	III C	47.300	6 56 29.38	16 18 10.35	16 1705
128	8.9	5.6	7.5	9.5	11.2	13.4	a	57 39.17	305 52	10.0	7.2	I	44.630	6 57 48.86	15 10 30.85	15 1612
129	8.2	56.8	58.9	1.0	3.5	5.5	c	58 1.14	304 18	10.0	7.1	III C	46.910	6 58 10.65	16 50 20.15	16 1720
130	8.8	18.0	20.1	22.4	24.6	26.7	c	59 22.36	304 18	"	"	III	43.720	6 59 31.89	−16 44 55.59	−16 1736
131	8.6	32.7	34.8	37.0	39.1	41.2	c	0 36.96	304 38	10.0	7.0	III A	42.170	7 0 46.54	−16 22 9.31	−16 1749
132	8.8	5.7	8.1	10.0	11.9	13.9	e	0 40.09	304 38	"	"	V B	41.210	7 0 49.65	16 28 58.02	16 1750
133	8.7	31.8	34.1	35.9	38.0	39.7	e	1 6.08	304 38	"	"	VII B	47.560	7 1 15.65	16 26 57.61	16 1755
134	......	46.3	48.4	50.6	52.4	54.1	e	1 20.55	304 38	"	"	VII A	45.410	7 1 30.13	16 21 10.18	16 1761
135	9.0	17.0	19.1	21.2	23.4	25.4	c	3 21.22	304 38	"	"	III	43.740	7 3 30.81	16 24 55.56	16 1784
136	9.0	34.1	36.5	38.4	40.6	42.9	c	3 38.50	304 38	"	"	V A	41.235	7 3 48.09	16 22 29.82	16 1788
137	9.0	12.7	14.8	16.7	19.1	21.0	c	4 16.86	304 38	"	"	III A	43.890	7 4 26.46	16 21 37.58	16 1793
138	7.5	53.7	55.8	57.8	2.0	3.6	$c_3\ d_2$	4 53.54	305 2	10.0	6.8	V B	42.970	7 5 3.17	16 4 24.48	16 1802
139	7.8	38.3	40.4	42.5	44.3	46.3	e	5 12.59	305 2	"	"	VII B	43.150	7 5 22.22	16 4 22.47	15 1676
140	9.0	10.8	13.0	15.1	17.4	19.4	c	9 15.14	305 42	10.0	7.8	III C	46.780	7 9 24.86	−15 26 21.57	−15 1709
141	8.9	46.6	48.8	51.0	53.1	55.3	c	9 50.96	305 42	"	"	III	51.065	7 10 0.70	−15 18 33.32	−15 1718
142	8.8	1.8	3.8	6.0	8.2	10.3	c	10 6.02	305 42	"	"	V	52.530	7 10 15.76	15 18 6.62	15 1720
143	9.1	48.5	50.6	52.9	55.2	57.1	c	10 52.86	305 42	"	"	III	48.230	7 11 2.60	15 19 28.08	15 1729
144	6.0	28.5	30.7	32.7	35.1	37.2	c	11 32.84	305 42	"	"	III B	42.470	7 11 42.58	15 24 32.19	15 1734
145	9.0	32.5	34.7	36.8	38.9	41.1	c	12 36.80	304 20	10.0	7.9	III	45.170	7 12 46.42	16 42 31.87	16 1873
146	8.9	30.5	32.5	34.3	36.4	38.6	a	14 4.33	304 58	10.0	7.7	I	41.315	7 14 14.02	16 5 42.80	16 1887
147	9.1	19.2	21.3	23.5	25.7	27.8	c	14 23.50	305 22	10.0	7.5	III B	41.080	7 14 33.22	15 45 1.06	15 1758
148	8.3	47.8	49.8	52.1	54.4	56.5	c	14 52.12	305 22	"	"	III B	50.260	7 15 1.85	15 42 5.00	15 1766
149	9.0	2.9	5.0	9.3	10.8	13.3	$c_4\ d_3$	15 0.66	305 22	"	"	VI	43.070	7 15 10.39	15 41 11.69	15 1767
150	9.1	38.7	40.8	42.9	45.3	47.4	c	18 43.02	304 38	10.0	7.8	III A	41.190	7 18 52.71	−16 22 33.95	−16 1933
151	9.2	1.1	3.3	5.4	7.7	9.8	c	19 5.46	304 38	"	"	III	45.440	7 19 15.15	−16 24 27.91	−16 1938
152	9.3	7.4	9.4	11.5	13.8	15.9	c	20 11.60	305 14	10.0	7.2	III	45.010	7 20 21.35	15 48 34.86	15 1811
153	9.0	27.7	29.8	31.7	33.5	35.8	a	26 1.68	304 6	10.0	7.7	I A	44.850	7 26 11.37	16 53 26.32	16 1986
154	9.1	24.1	26.2	28.0	29.9	32.4	a	26 58.12	304 6	"	"	I B	48.720	7 27 7.81	16 58 41.06	16 1994
155	8.5	54.8	56.8	59.0	1.2	3.4	c	26 59.04	304 6	"	"	III B	47.390	7 27 8.73	16 59 8.33	16 1995
156	9.4	28.0	30.1	32.1	34.1	36.0	e	27 2.15	304 6	"	"	V (B)	46.930	7 27 11.83	16 59 18.72	16 1997
157	9.1	12.3	14.5	16.6	18.8	21.0	c	28 16.64	304 6	"	"	III B	42.690	7 28 26.33	17 0 38.97	16 2012
158	9.1	48.5	50.4	52.7	54.9	57.0	c	28 52.70	304 6	"	"	III C	43.650	7 29 2.39	17 3 33.67	16 2015
159	9.0	11.2	13.4	15.5	17.7	19.8	c	30 15.52	304 6	"	"	III A	44.180	7 30 25.24	16 53 42.30	16 2027
160	9.0	8.8	11.0	13.1	15.3	17.3	c	31 13.10	304 6	"	"	III	46.530	7 31 22.82	−16 56 12.91	−16 2036
161	9.0	33.0	35.2	37.4	39.5	41.6	c	31 37.34	304 6	"	"	III B	50.310	7 31 47.06	−16 58 13.83	−16 2041
162	......	50.2	52.4	54.4	8.9	0.5	$c_3\ d_2$	34 50.23	304 36	10.0	7.5	V	49.990	7 35 0.03	16 25 7.41	....
163	9.4	28.9	30.9	33.0	37.5	39.0	$c_3\ d_2$	37 28.79	303 56	10.0	7.2	V A	40.160	7 37 38.54	17 5 4.12	16 2087
164	9.3	2 9	5.2	7.5	9.8	11.7	c	38 7.42	303 56	"	"	V B	45.510	7 38 17.17	17 9 50.45	17 2110
165	8.8	52.5	54.7	56.9	59.0	1.2	c	39 56.86	303 56	"	"	III A	46.570	7 40 6.64	17 3 0.41	16 2105
166	9.2	0.4	2.7	4.9	7.0	9.3	c	41 4.86	303 56	"	"	III	48.990	7 41 14.64	17 5 29.74	16 2116
167	9.0	41.4	43.5	45.5	47.7	49.9	c	42 45.60	303 56	"	"	III C	43.160	7 42 55.38	17 13 48.44	17 2158
168	9.0	13.5	15.5	17.5	19.3	21.6	a	43 47.52	303 56	"	"	I C	42.870	7 43 57.31	17 13 52.98	17 2165
169	8.5	32.4	34.2	36.1	38.0	40.2	a	44 6.21	303 56	"	"	I B	46.600	7 44 16.01	17 9 28.16	17 2171
170	9.1	53.7	55.9	57.8	59.6	2.0	a	44 27.81	303 56	"	"	III A	43.840	7 44 37.62	−17 3 54.26	−16 2138

Reduction Elements. Zone 158.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
December 2.4....	−0.068	+0.064	−0.013	−0.058	+0.075	−0.013
2.6....	−0.048	+0.086				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	o¹ Eridani		*A* Eridani		*β* Eridani		*β* Leporis		Piazzi VII. 85		Piazzi VII. 116	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	313 54 8.05		310 30 7.75		315 48 8.65		300 12 8.50		312 16 8.75		309 42 9.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq......	48.565	6 46.42		6 34.12	46.100	5 58.52	44.410	5 26.67	41.230	4 26.27	42.350	4 45.02
II | Red. to Mer......	.605	0.07	47.940	0.09	.130	0.05	.470	0.21	.300	0.09	.260	0.11
VI | Inclination	.760		48.080	−0.67	.225		.570		.470		.410	
VII | Refraction.......	.780	1 1.0	.090	1 8.8	.270	57.3	.630	1 41.1	.480	1 5.1	.370	1 11.2

	26 Monocerotis		9 Navis	
	° ′ ″		° ′ ″	
CIRCLE READING.	311 44 8.80		307 26 9.40	
	r	′ ″	r	′ ″
I | Microm. Eq......		4 55.90		4 16.77
II | Red. to Mer......		0.09	40.770	0.11
VI | Inclination	42.890	−1.68	.890	−0.67
VII | Refraction.......	.940	1 6.3	.965	1 17.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Groombridge 750..	4 4 9.77	3	+0.04	[+0.05]	46 20	....
o¹ Eridani...........	4 6 48.68	11	−0.02	+0.09	313 59 53.5	15.9
A Eridani...........	4 9 28.17	11	−0.02	+0.12	310 35 32.5	16.3
β Eridani...........	5 2 45.63	11	−0.01	+0.01	315 53 9.9	15.0
β Leporis...........	5 23 48.90	11	−0.03	−0.01	300 15 54.3	16.0
Piazzi VII. 85......	7 17 3.94	11	−0.02	+0.05	312 19 30.0	16.2
Piazzi VII. 116.....	7 22 59.36	11	−0.02	+0.10	309 45 42.9	16.1
26 Monocerotis	7 36 17.78	11	−0.02	−0.02	311 47 56.8	16.3
9 Navis.............	7 46 58.32	11	−0.02	+0.06	307 29 8.3	15.3

h		s
4.680............	*dt*	+0.052
	Hourly rate	−0.0014

Adopted Equator Point..........321° 6′ 15.″89

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 6	29.518	38.1	36.5
4 59	29.518	36.9	35.3
5 54	29.526	36.4	34.6
6 48	29.544	36.1	34.6
7 49	29.566	35.3	34.1

Notes.

13. High wind.

49, 93. Difficult.

β Leporis, 59, 99, 107. Clouds.

166. Close double; equal components.

Images unsteady and diffuse during this zone, except at the very beginning.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0				*D* = Z. D. N. to 1895.0				*R*			
			303°	304°	305°	306°	303°	304°	305°	306°	303° 30′	304°	305°	306°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
303	−0.029	4 0	.....	+9.329	+ 9.430	+ 9.528	....	−18.50	−18.58	−18.66	88.92	87.28	84.08	81.06
304	0.028	4 30	.....	9.226	9.331	9.435	....	17.30	17.35	17.39	89.04	87.40	84.20	81.17
305	0.026	5 0	.....	9.176	9.282	9.388	....	15.86	15.86	15.86	89.17	87.52	84.31	81.28
306	−0.025	5 30	.....	9.174	9.283	9.389	....	14.18	14.13	14.08	89.27	87.62	84.41	81.38
		6 0	.....	9.226	9.332	9.440	....	12.31	12.22	12.13	89.33	87.68	84.47	81.43
		6 30	.....	9.326	9.433	9.537	....	10.28	10.15	10.02	89.35	87.70	84.49	81.45
		7 0	.....	9.479	9.581	9.680	....	8.10	7.93	7.76	89.39	87.74	84.53	81.49
		7 30	+9.579	9.676	9.773	9.866	−6.04	5.84	5.64	5.43	89.50	87.84	84.63	81.58
		8 0	+9.830	+9.918	+10.004	+10.091	−3.76	− 3.52	− 3.29	− 3.04	89.62	87.96	84.74	81.70

1895 DECEMBER 6. ZONE 159. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	
1	8.3	15.6	17.7	19.5	21.5	23.9	a	4 49.77	303 16 10.0 7.0	I	48.770	4 4 58.45	−17 44 21.44	−17 805
2	8.5	51.4	53.4	55.6	57.8	59.9	c	4 55.62	303 16 " "	III	43.890	4 5 4.30	17 45 56.70	17 806
3	9.0	0.4	2.7	4.9	7.2	9.3	c	6 4.90	303 0 10.0 7.9	III	42.940	4 6 13.55	18 2 15.79	18 767
4	9.1	35.0	37.2	39.3	41.6	43.8	c	6 39.38	303 54 10.0 8.0	V	48.135	4 6 48.12	17 6 34 54	17 814
5	8.8	59.0	1.0	3.2	5.5	7.6	c	8 3.26	304 4 10.0 7.9	III A	43.090	4 8 12.01	16 54 54.62	17 821
6	9.4	9.4	11.8	13.8	16.0	18.1	c	8 13.82	304 4 " "	V B	43.775	4 8 22.56	17 1 11.79	17 822
7	8.8	3.3	5.3	7.6	9.5	11.2	e	8 37.46	304 4 " "	V C	46.280	4 8 46.19	17 3 36.39	17 823
8	9.0	41.8	43.8	46.0	48.2	50.4	c	10 46.04	303 52 10.0 8.4	III	46.490	4 10 54.76	17 9 6.11	17 833
9	8.6	27.1	29.2	31.4	33.6	35.7	c	12 31.40	303 20 10.0 7.0	III	44.790	4 12 40.06	17 41 41.83	17 837
10	8.9	16.2	18.3	20.0	22.0	24.3	a	13 50.24	303 36 10.0 7.5	I	45.560	4 13 58.92	−17 25 24.82	−17 844
11	8.1	22.7	24.8	26.7	28.4	30.7	a	15 56.83	303 2 10.0 7.1	I	47.790	4 16 5.44	−17 58 44.87	−18 811
12	9.1	14.2	16.4	18.6	20.8	23.0	c	21 18.60	303 34 10.0 7.5	III	46.190	4 21 27.25	17 27 17.02	17 876
13	9.1	50.6	52.6	54.8	56.9	59.4	c	25 54.86	303 28 10.0 7.9	III	46.990	4 26 3.49	17 33 3.42	17 893
14	9.0	26.8	28.9	31.2	33.4	35.6	c	27 31.18	303 16 10.0 8.7	III	44.670	4 27 39.78	17 45 48.80	17 900
15	9.1	5.5	7.6	9.8	12.0	14.2	c	30 9.82	303 6 10.0 7.4	III	44.270	4 30 18.40	17 55 58.65	18 872
16	8.0	24.3	26.4	28.7	30.9	33.0	c	33 28.66	303 6 " "	III B	38.840	4 33 37.22	18 0 57.38	18 883
17	9.2	5.7	7.8	9.9	12.0	14.4	c	43 9.96	303 46 10.0 8.5	III	46.290	4 43 18.57	17 15 21.72	17 955
18	9.0	3.2	5.5	7.5	9.8	12.0	c	44 7.60	303 46 " "	III	49.800	4 44 16.21	17 14 14.70	17 959
19	9.2	28.2	30.4	32.7	34.9	37.0	c	47 32.64	304 20 10.0 7.7	III	43.240	4 47 41.30	16 42 20.36	16 980
20	9.3	44.3	46.5	48.6	50.9	53.0	c	47 48.66	304 20 " "	V B	48.500	4 47 57.32	−16 43 54.36	−16 981
21	9.0	49.4	51.3	53.3	55.2	57.6	a	49 23.49	303 18 10.0 7.3	I	44.220	4 49 32.04	−17 44 4.37	−17 983
22	7.0	55.5	57.6	59.5	1.3	3.6	a	50 29.49	304 8 10.0 7.7	I	44.070	4 50 38.13	16 54 4.66	16 991
23	9 1	48.6	50.8	52.5	54.5	56.9	a	51 22.75	303 30 10.0 8.0	I	49.340	4 51 31.32	17 30 25.77	17 991
24	8.1	33.5	35.7	37.9	40.1	42.3	c	51 37.90	303 8 10.0 6.5	III	45.670	4 51 46.43	17 53 39.89	17 994
25	9.4	1.6	3.7	5.8	8.0	10.1	c	53 5.84	303 34 10.0 7.2	III	46.230	4 53 14.41	17 27 27.83	17 999
26	7.7	5.9	8.0	10.1	12.5	14.7	c	54 10.24	303 4 10.0 8.0	III	45.940	4 54 18.76	17 57 35.11	18 966
27	9.3	47.0	49.2	50.9	53.0	55.3	a	55 21.07	304 6 10.0 7.7	I	47.540	4 55 29.69	16 54 59.91	....
28	8.8	4.6	6.7	9.0	11.0	13.3	c	56 8.92	303 18 10.0 8.9	V	44.830	4 56 17.46	17 43 57.23	17 1009
29	8.0	39.8	41.8	44.0	46.2	48.6	c	56 44.08	303 18 " "	III (A)	40.170	4 56 52.62	17 42 10.11	17 1011
30	8.9	24.5	26.7	28.7	30.6	32.6	e	56 58.53	302 58 10.0 8.0	V A	39.780	4 57 7.04	−18 2 20.81	−18 976
31	8.6	29.1	31.2	33.0	35.0	37.3	a	0 3.30	302 58 " "	I A	42.530	5 0 11.80	−18 1 25.93	−18 990
32	8.7	2.5	4.7	6.8	9.2	11.2	c	0 6.88	302 58 " "	III	42.250	5 0 15.38	18 4 48.46	18 991
33	9.3	15.4	17.3	21.8	23.4	26.0	c_4 d_3	0 13.09	303 14 10.0 8.0	VI	43.920	5 0 21.62	17 48 17.46	17 1018
34	9.1	26.0	28.2	30.5	32.7	34.8	c	1 30.44	303 28 10.0 8.1	III	43.350	5 1 38.99	17 34 26.08	17 1021
35	7.8	29.0	31.0	33.1	35.4	37.5	c	2 33.20	303 40 10.0 9.1	III B	43.260	5 2 41.76	17 25 40.32	17 1028
36	8.0	56.7	58.1	2.5	4.7	7.0	b_2 c_3	3 6.87	303 40 " "	III (B)	45.150	5 3 15.44	17 25 5.78	17 1029
37	9.1	12.2	14.3	16.6	18.8	21.0	c	3 16.58	303 40 " "	V	45.155	5 3 25.15	17 21 52.24	17 1030
38	8.9	54.9	57.0	59.1	1.5	3.5	c	3 59.20	303 40 " "	III C	47.840	5 4 7.76	17 27 25.86	17 1031
39	9.2	40.6	42.9	45.0	47.3	49.4	c	4 45.04	303 40 " "	III A	45.220	5 4 53.62	17 18 34.78	17 1033
40	8.9	22.8	25.0	27.2	29.5	31.6	c	5 27.22	303 52 10.0 8.0	V	48.400	5 5 35.81	−17 8 50.63	−17 1035
41	9.0	41.0	43.2	45.3	47.5	49.7	c	6 45.34	303 52 " "	III	44.600	5 6 53.93	−17 10 2.72	−17 1041
42	8.6	21.0	22.9	24.8	26.9	29.0	a	7 55.02	303 24 10.0 8.5	I A	46.010	5 8 3.56	17 34 20.30	17 1046
43	8.7	54.0	56.0	58.3	0.6	2.8	c	7 58.34	303 24 " "	III A	45.740	5 8 6.88	17 34 27.20	17 1047
44	8.6	37.6	39.7	42.0	44.3	46.4	c	8 42.00	303 24 " "	III B	40.200	5 8 50.53	17 42 42.54	17 1051
45	8.0	23.0	25.4	27.3	29.4	31.2	e	8 57.31	303 48 10.0 8.1	V	46.700	5 9 5.89	17 13 24.75	17 1054
46	8.0	44.2	46.4	48.5	50.7	52.9	c	12 48.54	303 8 10.0 8.0	III	48.140	5 12 57.05	17 52 59.54	17 1073
47	9.0	2.4	4.7	6.9	9.2	11.2	c	13 6.88	303 8 " "	V B	41.690	5 13 15.37	17 58 18.32	18 1044
48	8.1	7.2	9.3	11.6	13.8	16.0	c	14 11.58	303 22 10.0 8.0	III	42.950	5 14 20.11	17 40 38.85	17 1081
49	9.1	46.0	48.1	50.3	52.6	54.7	c	14 50.34	303 14 12.3 9.5	III B	45.600	5 14 58.85	17 51 0.12	17 1085
50	9.0	37.5	39.6	41.9	44.0	46.3	c	15 41.86	303 14 " "	III	46.870	5 15 50.37	−17 47 22.72	−17 1089
51	9.0	36.7	38.9	41.0	43.2	45.3	c	16 41.02	303 40 10.0 8.8	III B	44.450	5 16 49.57	−17 25 22.88	−17 1096
52	9.1	0.3	2.4	4.5	6.8	9.0	c	18 4.60	303 40 " "	III	44.240	5 18 13.16	17 22 14.11	17 1103
53	6.5	48.3	50.5	52.6	54.9	57.0	c	19 52.66	303 58 10.0 8.4	III	44.990	5 20 1.25	17 3 59.57	17 1117
54	8.0	50.0	52.0	53.9	55.8	58.1	a	23 24.15	302 56 10.0 8.3	I	47.550	5 23 32.63	18 5 13.80	18 1095
55	8.8	51.3	53.4	55.3	57.0	59.5	a	24 25.39	303 38 10.0 7.7	I C	45.060	5 24 33.94	17 30 26.25	17 1147
56	8.4	29.3	31.5	33.6	36.0	38.0	c	24 33.68	303 38 " "	III	44.880	5 24 42.24	17 24 4.90	17 1148
57	9.0	4.0	6.3	8.3	10.5	12.7	c	25 8.36	303 38 " "	III A	47.710	5 25 16.93	17 19 55.38	17 1152
58	9.1	42.9	45.0	47.3	49.5	51.7	c	26 47.28	303 38 " "	III	41.950	5 26 55.84	17 25 1.96	17 1159
59	8.3	21.9	24.0	26.0	28.4	30.6	c	28 26.18	303 38 " "	III A	48.340	5 28 34.75	17 19 44.52	17 1167
60	9.0	38.8	40.8	43.0	45.3	47.4	c	29 43.06	303 48 10.0 8.0	III	47.370	5 29 51.64	−17 13 18.31	−17 1173
61	8.9	25.1	27.1	29.4	31.6	33.8	c	31 29.40	304 4 10.0 8.1	III A	42.650	5 31 38.01	−16 55 33.21	−16 1180
62	8.9	13.8	15.7	18.0	20.2	22.5	c	32 18.04	304 4 " "	III	44.650	5 32 26.63	17 4 36.77	17 1186
63	8.5	57.3	59.4	1.6	3.8	5.9	c	34 1.60	304 4 " "	III	43.900	5 34 10.21	16 58 25.57	17 1196
64	9.1	39.6	41.6	43.7	46.0	48.2	c	35 43.82	304 4 " "	III B	47.940	5 35 52.43	17 0 21.96	17 1207
65	8.8	31.9	33.9	36.0	38.2	40.5	c	36 36.10	304 4 " "	III A	42.570	5 36 44.71	16 55 36.64	16 1203
66	8.5	25.6	27.6	29.5	31.3	33.7	a	37 59.55	304 4 " "	I C	46.970	5 38 8.15	17 3 53.00	17 1215
67	8.9	7.7	9.8	12.0	14.2	16.5	c	38 12.04	303 0 10.0 7.5	III	44.710	5 38 20.53	−18 2 15.59	−18 1165

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
68	8.8	23.0	25.4	27.5	29.7	31.8	c	38 27.48	303 0 10.0 7.5	V A 45.005	5 38 35.98	−17 58 56.09	−18 1168
69	9.1	34.4	36.5	38.8	41.0	43.2	c	39 38.78	303 0 " "	III B 40.560	5 39 47.27	18 6 49.11	18 1176
70	9.0	6.7	9.0	11.1	13.3	15.3	c	40 11.08	303 0 " "	III B 37.890	5 40 19.57	−18 7 40.56	−18 1177
71	9.0	19.7	21.8	24.0	26.1	28.5	c	42 24.02	303 0 " "	III C 48.460	5 42 32.51	−18 7 31.43	−18 1186
72	8.6	29.3	31.4	33.6	35.7	38.1	c	44 33.62	303 4 10.0 7.8	III C 42.950	5 44 42.11	18 5 17.60	18 1196
73	8.9	43.0	45.2	47.3	49.6	51.8	c	45 47.38	303 4 " "	III 45.880	5 45 55.89	17 57 55.57	17 1260
74	8.5	50.4	52.7	54.9	57.0	59.3	c	46 54.86	303 4 " "	III A 42.770	5 47 3.38	17 55 40.27	17 1267
75	9.1	31.7	33.8	36.0	38.3	40.4	c	48 36.04	302 56 10.0 7.4	III A 42.970	5 48 44.55	18 3 37.74	18 1219
76	8.9	14.0	16.1	18.2	20.6	22.8	c	49 18.34	302 56 " "	III B 43.060	5 49 26.84	18 10 5 05	18 1226
77	8.2	8.9	11.0	13.0	14.8	17.2	a	51 43.03	303 44 10.0 7.2	I A 43.960	5 51 51.64	17 15 15.47	17 1300
78	9.0	48.4	50.6	52.8	55.0	57.1	c	51 52.78	303 44 " "	III 46.440	5 52 1.38	17 17 45.04	17 1302
79	7.8	56.7	58.9	1.0	3.1	5.3	c	53 1.00	303 4 10.0 7.1	III C 47.225	5 53 9.52	18 3 59.08	18 1247
80	8.7	32.0	33.5	37.8	40.0	42.2	b_2 c_3	53 42.19	303 4 " "	III B 50.230	5 53 50.72	−17 59 48.72	−18 1254
81	9.0	9.2	11.2	13.0	15.0	17.4	a	54 43.31	303 4 " "	I A 45.750	5 54 51.85	17 54 44.61	−17 1319
82	8.6	38.0	39.9	41.9	43.8	46.3	a	57 12.16	302 58 10.0 8.9	III 46.590	5 57 20.69	18 3 46.04	18 1270
83	9.0	37.7	39.7	41.6	43.5	45.9	a	58 11.88	302 58 " "	I C 49.270	5 58 20.40	18 9 19.84	18 1279
84	8.6	39.7	41.6	43.6	45.8	47.8	a	0 13.86	303 4 10.0 8.1	I 48.900	6 0 22.40	17 57 1.30	17 1344
85	8.7	13.2	15.3	17.6	19.8	22.0	c	0 17.58	303 4 " "	III C 46.320	6 0 26.11	18 4 18.66	18 1291
86	8.9	4.3	6.5	8.3	10.0	12.4	a	1 38.48	303 4 " "	I B 41.230	6 1 47.02	18 2 42.18	18 1301
87	9.0	34.5	36.7	38.9	41.1	43.3	c	1 38.90	303 4 " "	III B 43.080	6 1 47.44	18 2 8.41	18 1302
88	9.1	44.0	45.9	47.8	49.8	52.0	a	3 17.95	303 48 10.0 9.0	I B 47.015	6 3 26.58	17 16 48.70	17 1364
89	9.2	15.7	17.9	20.2	22.2	24.5	c	3 20.10	303 48 " "	III C 48.990	6 3 28.72	17 19 25.49	17 1365
90	9.0	51.2	53.2	55.5	57.7	59.8	c	3 55.48	303 48 " "	III C 49.300	6 4 4.11	−17 19 19.75	−17 1371
91	8.1	38.1	40.2	42.3	44.6	46.7	c	4 42.38	303 48 " "	III B 48.180	6 4 51.01	−17 16 28.61	−17 1377
92	9.0	47.3	49.5	51.6	54.0	56.0	c	5 51.68	303 48 " "	III A 44.010	6 6 0.32	17 11 20.35	17 1386
93	8.4	30.8	32.9	34.7	36.5	38.9	a	7 4.84	303 38 10.0 8.0	I 41.865	6 7 13.46	17 25 16.93	17 1393
94	8.0	6.8	8.9	11.1	13.4	15.4	c	7 11.12	302 52 10.0 8.8	V 46.660	6 7 19.66	18 9 50.15	18 1334
95	7.5	8.8	10.9	13.2	15.4	17.5	c	8 13.16	303 18 10.0 8.0	III 45.140	6 8 21.75	17 44 17.19	17 1398
96	8.9	44.7	46.9	49.0	51.3	53.5	c	9 49.08	303 18 " "	III B 44.150	6 9 57.67	17 47 50.11	17 1409
97	8.7	4.2	6.5	8.6	10.9	13.0	c	10 8.64	303 6 10.0 8.6	V C 43.900	6 10 17.20	18 3 9.55	18 1349
98	8.9	39.0	41.3	43.4	45.6	47.7	c	11 43.40	303 6 " "	III A 41.170	6 11 51.98	17 54 19.68	17 1421
99	6.0	32.0	34.0	36.0	37.9	40.0	a	13 5.95	304 20 10.0 9.0	I B 41.160	6 13 14.66	16 46 42.86	16 1426
100	8.7	8.4	10.6	12.9	15.0	17.0	c	13 12.78	304 20 " "	III 43.280	6 13 21.50	[−16 42 50.65]	−16 1427
101	9.1	33.5	35.6	37.8	40.1	42.3	c	13 37.86	304 20 " "	III C 48.200	6 13 46.56	−16 47 42.60	−16 1429
102	9.0	14.4	16.5	18.4	20.3	22.5	a	15 48.46	303 52 10.0 7.6	I B 43.650	6 15 57.13	17 13 58.36	17 1450
103	9.0	52.0	53.9	55.8	57.7	0.2	a	16 25.95	303 52 " "	I 43.510	6 16 34.63	17 10 48.17	17 1456
104	8.5	22.3	24.0	28.3	30.3	32.6	b_2 c_3	16 32.55	304 22 10.0 8.4	III (A) 42.380	6 16 41.28	16 37 53.90	16 1446
105	8.0	39.1	41.3	45.8	47.9	52.2	c_1 d_1	16 43.54	304 22 " "	V C 49.150	6 16 52.26	16 45 26.87	16 1448
106	8.2	43.2	45.3	47.4	49.8	52.0	c	17 47.54	304 22 " "	III 43.200	6 17 56.26	16 40 54.05	16 1456
107	9.1	32.2	34.2	36.4	38.7	40.8	c	19 36.46	303 12 10.0 9.0	III 46.640	6 19 45.08	17 49 52.46	17 1476
108	9.2	13.1	15.3	17.5	19.7	22.0	c	22 17.52	303 12 " "	III C 48.130	6 22 26.14	17 55 51.11	17 1494
109	9.1	15.6	17.6	19.5	21.3	23.7	a	23 49.58	303 44 10.0 8.1	I A 48.130	6 23 58.27	17 14 6.82	17 1505
110	6.5	58.7	0.7	2.8	5.1	7.3	c	24 2.92	303 44 " "	III C 47.190	6 24 11.60	−17 24 8.33	−17 1506
111	9.2	12.5	14.6	16.8	19.1	21.2	c	25 16.84	303 44 " "	III 45.020	6 25 25.53	−17 18 24.17	−17 1513
112	9.0	21.2	23.3	25.2	27.0	29.3	a	26 55.28	303 44 " "	I C 43.760	6 27 3.97	17 25 13.86	17 1518
113	8.6	48.4	50.4	52.7	54.9	56.9	c	26 52.66	304 42 10.0 8.6	V 47.330	6 27 1.45	16 19 38.20	16 1513
114	9.1	29.5	31.6	33.7	35.5	37.4	e	27 3.72	304 42 " "	VII B 44.510	6 27 12.52	16 23 47.24	16 1515
115	8.7	6.5	8.7	10.8	13.0	15.2	c	32 10.84	303 54 10.0 7.7	III 42.990	6 32 19.57	17 9 5.26	17 1554
116	8.2	18.6	20.7	23.0	25.2	27.3	c	33 22.96	303 54 " "	III 45.880	6 33 31.70	17 8 10.25	17 1564
117	9.1	40.5	42.8	44.7	47.0	49.3	c	34 44.86	303 54 " "	III C 49.520	6 34 53.60	17 13 27.12	17 1572
118	8.3	24.7	26.8	29.0	31.3	33.4	c	35 29.04	303 54 " "	III B 43.680	6 35 37.78	17 12 6.53	17 1578
119	8.6	17.2	19.5	21.7	23.9	26.0	c	36 21.66	303 20 10.0 7.8	III 49.360	6 36 30.36	17 41 6.46	17 1582
120	9.1	20.3	22.3	24.5	26.7	29.0	c	37 24.56	303 20 " "	III 51.110	6 37 33.26	−17 40 33.23	−17 1588
121	8.9	52.2	54.4	56.6	58.8	1.0	c	37 56.60	303 20 " "	III 47.940	6 38 5.30	−17 41 34.27	−17 1592
122	8.7	48.1	50.0	51.9	53.8	56.1	a	40 21.93	304 20 10.0 7.6	I 47.580	6 40 30.74	16 41 37.11	16 1589
123	9.3	25.5	27.5	29.4	31.3	33.8	a	40 59.47	304 20 " "	I C (50).685	6 41 8.28	16 47 4.16	16 1593
124	9.3	58.0	0.2	2.3	4.6	6.8	c	41 2.38	304 20 " "	III C 44.705	6 41 11.18	16 49 0.33	16 1594
125	9.2	35.8	38.0	40.2	42.3	44.5	c	41 40.16	304 20 " "	III C 42.540	6 41 48.96	16 49 42.12	16 1596
126	9.3	9.4	11.7	13.6	15.5	17.4	e	41 43.64	304 20 " "	V B 45.760	6 41 52.46	16 45 28.92	16 1597
127	8.7	36.5	38.6	42.9	44.6	47.4	c_4 d_3	42 34.30	303 4 10.0 7.5	VI 46.890	6 42 43.00	17 57 59.13	17 1624
128	9.0	53.0	55.0	57.4	59.6	1.6	c	44 57.32	303 24 10.0 7.5	III A 40.830	6 45 6.06	17 36 37.75	17 1639
129	8.6	19.5	21.7	23.9	26.2	28.3	c	46 23.92	303 24 " "	III C 46.900	6 46 32.66	17 44 23.42	17 1650
130	8.6	45.4	47.7	49.8	52.0	54.2	c	46 49.82	303 8 10.0 7.7	V 41.600	6 46 58.54	−17 55 41.29	−17 1651
131	9.0	1.8	3.8	5.8	7.6	10.0	a	49 36.00	302 52 10.0 7.8	I 47.820	6 49 44.71	−18 9 40.90	−18 1598
132	9.2	45.4	47.4	49.3	51.2	53.6	a	50 19.39	304 4 10.0 8.5	I C 47.580	6 50 28.21	17 4 7.57	17 1675
133	8.2	6.0	8.0	9.9	11.8	14.2	a	50 40.00	304 4 " "	I C (44).050	6 50 48.82	17 5 15.45	17 1679
134	6.0	57.7	59.8	1.7	3.5	5.8	a	51 31.69	304 4 " "	I A 44.350	6 51 40.53	16 55 27.98	16 1661
135	9.0	36.5	38.7	40.8	43.0	45.2	c	51 40.84	304 4 " "	III C 47.240	6 51 49.67	17 4 15.93	17 1689
136	8.9	14.8	16.9	19.0	21.3	23.3	c	52 19.06	304 4 " "	III 50.400	6 52 27.91	16 56 49.25	16 1669
137	8.0	28.7	30.8	35.1	36.7	39.5	c_4 d_3	52 26.51	304 4 " "	VI 46.815	6 52 35.36	16 58 0.05	16 1671
138	9.0	15.2	17.5	19.6	21.5	23.3	e	52 49.52	304 4 " "	V 47.590	6 52 58.37	16 57 44.71	16 1674
139	9.0	51.9	54.0	56.3	58.5	0.6	c	53 56.26	304 4 " "	III B 48.710	6 54 5.11	17 0 35.58	16 1686
140	9.4	45.1	47.3	49.4	51.7	53.8	c	54 49.46	304 4 " "	V 51.480	6 54 58.32	−16 56 30.73	−16 1692

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
141	8.8	5.0	7.2	9.4	11.5	13.5	c	56 9.32	302 56 10.0	8.5	III B	45.550	6 56 18.06	−18 9 41.09	−18 1633
142	9.0	37.7	39.8	41.9	44.2	46.4	c	56 42.00	302 56 "	"	III B	46.460	6 56 50.75	18 9 23.80	18 1637
143	8.9	22.0	24.0	26.2	28.4	30.7	c	57 26.26	302 56 "	"	III C	49.560	6 57 35.01	18 11 37.50	18 1644
144	8.6	21.7	23.8	26.0	28.4	30.5	c	58 26.08	302 56 "	"	III C	50.260	6 58 34.83	18 11 24.42	18 1650
145	8.7	21.5	23.5	25.4	27.3	29.6	a	59 55.64	302 56 "	"	I	51.220	7 0 4.41	18 4 38.69	18 1664
146	8.5	9.9	12.0	14.2	16.4	18.7	c	0 14.24	303 26 10.0	9.0	III	41.940	7 0 23.06	17 37 36.39	17 1761
147	8.4	15.2	17.3	19.5	21.7	23.9	c	4 19.52	303 2 10.0	8.4	III	42.560	7 4 28.32	18 1 27.65	17 1801
148	8.6	42.4	44.6	46.5	48.3	50.6	a	6 16.63	303 8 10.0	8.0	I A	40.090	7 6 25.46	17 52 58.42	17 1824
149	9.2	23.5	25.7	27.5	29.5	31.8	a	6 57.77	303 8 "	"	I B	43.570	7 7 6.59	17 58 20.60	17 1829
150	9.0	54.8	56.9	59.3	1.4	3.6	c	6 59.20	303 8 "	"	III B	49.650	7 7 8.03	−17 56 25.62	−17 1830
151	9.1	35.6	37.8	40.0	42.2	44.3	c	7 39.98	303 8 "	"	III C	40.540	7 7 48.80	−18 2 33.68	−17 1842
152	9.1	4.4	6.6	8.6	11.0	13.1	c	9 8.74	303 42 10.0	8.0	III	41.970	7 9 17.64	17 21 38.45	17 1856
153	8.8	11.8	13.8	15.7	17.5	20.0	a	12 45.94	303 2 10.0	8.6	I B	41.370	7 12 54.80	18 5 4.87	18 1766
154	9.0	51.1	53.4	55.6	57.9	59.9	c	12 55.58	303 2 "	"	III	42.830	7 13 4.44	18 1 25.33	17 1898
155	9.4	35.2	37.2	39.5	41.6	44.0	c	14 39.50	303 2 "	"	III C	40.780	7 14 48.36	18 8 31.54	18 1780
156	8.9	59.9	2.0	4.2	6.4	8.6	c	16 4.22	303 2 "	"	III C	42.980	7 16 13.09	18 7 49.78	18 1793
157	8.0	38.4	40.5	42.7	44.8	47.1	c	19 42.70	302 54 10.0	7.6	III	43.550	7 19 51.59	18 9 14.78	18 1822
158	8.8	42.7	44.8	46.5	48.4	50.8	a	25 16.70	303 44 10.0	8.5	I	42.170	7 25 25.72	[17 19 38.08]	17 2000
159	8.7	15.8	17.9	20.1	22.4	24.5	c	25 20.14	303 22 10.0	8.5	III C	43.770	7 25 29.11	17 47 36.54	17 2004
160	9.0	53.8	56.0	58.2	0.4	2.5	c	25 58.18	303 22 "	"	III A	42.880	7 26 7.17	−17 38 12.12	−17 2007
161	9.0	27.3	29.5	31.6	33.7	35.9	c	26 31.60	303 22 "	"	III C	42.890	7 26 40.58	−17 47 53.80	−17 2014
162	9.0	43.5	45.6	49.8	51.5	54.2	c_4 d_3	30 41.26	303 54 10.0	8.0	VI B	48.170	7 30 50.33	17 11 1.43	17 2050
163	9.4	44.6	46.7	49.0	51.1	53.2	c	31 48.92	303 54 "	"	III C	49.610	7 31 57.99	17 13 44.84	17 2059
164	9.1	35.2	37.3	39.2	41.1	43.5	a	33 9.29	303 54 "	"	I B	45.830	7 33 18.38	17 11 43.17	17 2063
165	9.2	58.3	0.5	2.3	4.1	6.6	a	33 32.38	303 54 "	"	III	49.360	7 33 41.47	17 7 23.95	17 2068
166	9.3	3.8	5.7	7.6	9.3	11.6	a	34 37.75	303 8 10.0	9.0	I	47.125	7 34 46.78	17 54 7.91	17 2077
167	9.3	41.2	43.3	45.6	47.8	49.9	c	34 45.56	303 8 "	"	III C	45.630	7 34 54.58	18 1 4.50	17 2078
168	9.1	28.0	30.8	32.6	36.8	38.8	b_1 c_2	40 41.09	303 4 10.0	8.5	I	44.750	7 40 50.16	−17 58 55.95	−17 2138

Reduction Elements. Zone 159.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
December 6.4....	−0.046	+0.192	+0.306	−0.052	+0.180	+0.306
6.6....	−0.059	+0.168				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	γ Eridani		Lalande 8205		54 Eridani		60 Eridani		Lalande 14810		26 Monocerotis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	307 14 8.80		300 10 8.70		301 10 9.00		304 38 9.20		298 58 8.80		311 44 9.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.080	5 20.44		4 47.40	45.200	5 41.79	45.820	5 53.98	45.890	5 54.77	42.890	4 58.00
II Red. to Mer......	.110	0.14		0.21	.250	0.20	.870	0.16	.940	0.22	.970	0.09
VI Inclination	.280		42.455	−1.68	.380		46.025		46.045		43.080	
VII Refraction.......	.310	1 20.2	.490	1 44.7	.400	1 40.6	.060	1 28.1	.065	1 49.6	.160	1 8.3

	9 Navis	
	° ′ ″	
CIRCLE READING.	307 26 8.95	
	r	′ ″
I Microm. Eq......	40.965	4 20.98
II Red. to Mer......	41.015	0.13
VI Inclination	.175	
VII Refraction.......	.220	1 19.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Eridani..........	3 53 12.55	11	+0.31	−0.75	307 18 9.2	17.5
Groombridge 750..	4 4 12.64	4	−1.82	[−0.83]	46 20	....
Lalande 8205......	4 16 9.00	11	+0.32	−0.91	300 13 9.9	17.7
54 Eridani..........	4 35 55.63	11	+0.32	−0.82	301 14 10.4	17.8
60 Eridani..........	4 45 32.46	11	+0.32	−0.86	304 42 35.2	18.8
Lalande 14810.....	7 29 37.76	11	+0.33	−0.83	299 2 14.2	18.3
26 Monocerotis	7 36 18.40	11	+0.30	−0.84	311 47 59.0	19.3
4 Navis..........	7 41 11.18	11	+0.31	−0.79	306 48	....
9 Navis..........	7 46 58.95	11	+0.31	−0.79	307 29 10.6	18.6

h 4.380............*dt*..................... s −0.835

Hourly rate .... +0.0071

Adopted Equator Point........ 321° 6′ 18.29″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 57	29.944	27.8	25.5
4 58	29.914	27.9	25.6
5 58	29.894	27.2	25.3
7 1	29.880	27.8	25.3
7 49	29.878	28.0	25.7

Notes.

52. Faint close companion, n. f.

158. Images good.

9 Navis. Images steady. Seeing good all through the zone.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0				$D=$ Z. D. N. to 1895.0				R			
			302°	303°	304°	305°	302°	303°	304°	305°	302° 30′	303°	304°	305°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
303	+0.318	4 0	.....	+9.193	+9.292	+9.391	....	−17.72	−17.82	−17.93	95.94	94.12	90.66	87.34
304	0.316	4 30	.....	9.073	9.177	9.282	....	16.52	16.58	16.64	95.87	94.06	90.59	87.28
305	+0.314	5 0	.....	9.006	9.115	9.221	....	15.06	15.09	15.11	95.81	93.99	90.53	87.22
		5 30	.....	8.992	9.103	9.211	....	13.40	13.37	13.35	95.79	93.97	90.51	87.20
		6 0	.....	9.032	9.142	9.249	....	11.53	11.46	11.39	95.79	93.97	90.51	87.20
		6 30	+9.018	9.127	9.232	9.338	−9.62	9.51	9.40	9.28	95.76	93.95	90.49	87.18
		7 0	+9.167	9.270	9.373	9.475	−7.50	7.35	7.20	7.05	95.76	93.95	90.49	87.18
		7 30	.....	9.465	9.562	9.656	....	5.10	4.90	4.71	95.72	93.91	90.45	87.14
		8 0	.....	+9.704	+9.793	+9.880	....	− 2.79	− 2.57	− 2.35	95.68	93.86	90.41	87.10

1895 DECEMBER 10. ZONE 160. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.0	0.5	2.6	4.7	7.0	9.1	c	47 4.78	307 8 10.0 7.4	III 45.030	3 47 13.20	−13 53 14.41	−14 763
2	8.6	11.7	13.7	15.9	18.2	20.2	c	48 15.94	307 8 " "	III B 41.480	3 48 24.36	13 57 36.22	14 767
3	8.0	5.7	7.9	10.0	12.2	14.4	c	49 10.04	306 42 10.0 7.0	V 50.870	3 49 18.42	14 17 25.79	14 772
4	8.9	48.7	50.7	52.5	54.4	56.6	a	51 22.16	306 54 10.0 7.1	I A 46.980	3 51 30.56	14 3 22.15	14 781
5	8.9	21.8	24.0	26.2	28.3	30.5	c	51 26.16	306 54 " "	III C 47.440	3 51 34.54	14 12 56.59	14 782
6	8.0	44.0	48.3	49.8	52.5	7.4	c_5 e_2	51 39.78	307 8 10.0 7.3	VI 45.010	3 51 48.20	13 53 18.32	14 783
7	8.2	29.1	31.2	33.4	35.5	37.7	c	59 33.38	306 28 10.0 7.3	III 48.520	3 59 41.70	14 32 13.54	14 812
8	9.0	53.4	55.5	57.7	59.9	2.0	c	59 57.70	306 28 " "	III 51.180	4 0 6.02	14 31 22.64	14 813
9	9.1	44.5	46.5	48.6	50.8	52.8	c	6 48.64	306 12 10.0 8.4	III 47.650	4 6 56.90	14 48 32.66	14 833
10	9.3	31.7	34.0	36.2	38.3	40.5	c	9 36.14	306 12 " "	III B 41.000	4 9 44.38	−14 53 54.54	−15 746
11	9.0	21.7	23.8	25.8	28.0	30.2	c	15 25.90	306 0 10.0 7.7	III 48.700	4 15 34.10	−15 0 16.74	−15 767
12	8.3	0.6	2.8	5.0	7.1	9.2	c	17 4.94	306 54 10.0 8.0	III 45.990	4 17 13.24	14 7 6.55	14 885
13	8.7	49.8	52.0	54.1	56.3	58.4	c	34 54.12	306 14 10.0 7.7	III 44.800	4 35 2.28	14 47 37.78	14 937
14	7.0	54.6	56.7	58.9	1.1	3.2	c	44 58.90	307 10 10.0 8.0	III B 40.280	4 45 7.14	13 56 18.57	14 970
15	8.8	32.8	34.8	37.0	39.2	41.3	c	45 37.02	307 10 " "	III A 44.710	4 45 45.28	13 48 25.08	13 987
16	8.9	46.5	48.4	50.3	52.2	54.4	a	49 20.02	306 30 10.0 7.8	I (C) 46.430	4 49 28.18	14 37 35.67	14 988
17	8.6	23.7	25.7	27.9	30.0	32.4	c	49 27.94	306 30 " "	III 49.070	4 49 36.12	14 30 20.23	14 990
18	8.8	2.9	5.0	7.1	9.4	11.5	c	51 7.18	306 50 10.0 7.7	III 45.670	4 51 15.38	14 11 25.14	14 996
19	8.7	57.3	59.3	1.4	3.7	5.7	c	52 1.48	307 14 10.0 8.0	III B 41.820	4 52 9.72	13 51 51.36	13 1026
20	8.6	16.3	18.3	20.5	22.7	24.9	c	52 20.54	307 14 " "	V 45.860	4 52 28.78	−13 47 22.00	−13 1029
21	8.0	56.3	58.5	0.7	2.8	5.0	c	53 0.66	307 14 " "	III B 42.670	4 53 8.90	−13 51 35.40	−13 1032
22	8.0	50.5	52.6	54.7	56.8	59.0	c	53 54.72	306 4 9.5 7.2	V 49.660	4 54 2.84	14 56 13.68	15 910
23	9.0	12.3	14.5	16.6	18.8	20.8	c	54 16.60	306 4 " "	V 49.980	4 54 24.72	14 56 7.66	15 912
24	......	50.8	52.9	55.0	57.3	59.3	c	54 55.06	306 4 " "	V 46.020	4 55 3.18	14 57 23.91	15 915
25	8.9	39.0	41.2	43.4	45.5	47.7	c	56 43.36	306 48 10.0 8.2	III B 43.040	4 56 51.54	14 17 30.79	14 1016
26	9.0	25.5	27.8	29.8	32.0	34.3	c	57 29.88	306 48 " "	III A 41.850	4 57 38.06	14 11 25.23	14 1019
27	9.1	10.2	12.4	14.5	16.8	18.9	c	58 14.56	306 30 10.0 7.7	III C 48.790	4 58 22.70	14 36 55.01	14 1022
28	6.5	5.7	7.7	9.8	12.0	14.2	c	59 9.88	306 30 " "	III 48.280	4 59 18.04	14 30 38.93	14 1027
29	9.3	4.5	6.8	8.8	11.0	13.2	c	0 8.86	306 30 " "	III C 42.890	5 0 17.00	14 38 48.95	14 1034
30	8.0	37.8	39.8	41.7	43.5	45.8	a	1 11.30	306 58 10.0 8.0	III 46.895	5 1 19.50	−14 3 4.73	−14 1040
31	8.6	20.3	22.5	24.7	26.8	28.8	c	1 24.62	307 14 10.0 7.2	V 46.875	5 1 32.84	−13 47 6.17	−13 1062
32	8.4	23.2	25.3	27.5	29.6	31.8	c	4 27.48	306 10 10.0 8.5	III 45.410	5 4 35.58	14 51 36.52	14 1055
33	9.4	10.2	12.3	14.5	16.7	18.8	c	5 14.50	306 10 " "	III C 49.730	5 5 22.60	14 56 40.10	15 956
34	9.1	57.5	59.6	1.7	3.8	6.0	c	6 1.72	307 2 10.0 7.6	III 43.860	5 6 9.82	14 0 4.75	14 1064
35	8.9	12.2	14.5	16.6	18.8	21.0	c	7 16.62	306 50 10.0 7.3	III 43.360	5 7 24.80	14 12 15.53	14 1067
36	9.0	2.3	4.3	6.1	8.0	10.4	a	8 35.87	306 30 10.0 7.2	I 40.680	5 8 44.00	14 33 6.99	14 1071
37	8.7	47.6	49.7	51.8	54.0	56.2	c	8 51.86	307 14 10.0 7.1	III 48.280	5 9 0.08	13 46 40.65	13 1094
38	8.3	47.0	49.2	51.4	53.5	55.7	c	9 51.36	307 0 10.0 8.1	III 42.980	5 9 59.54	14 2 22.88	14 1076
39	9.4	4.6	6.8	8.6	10.4	12.5	a	11 38.13	307 12 10.1 8.3	I 45.380	5 11 46.34	13 49 35.26	13 1110
40	8.6	42.8	44.9	47.0	49.2	51.3	c	11 47.04	306 44 10.0 7.9	III 46.520	5 11 55.22	−14 17 16.53	−14 1083
41	8.9	54.3	56.5	58.7	0.8	2.8	c	13 58.62	306 54 10.0 8.4	III 46.290	5 14 6.80	−14 7 21.00	−14 1093
42	8.0	57.5	59.4	1.2	3.0	5.4	a	16 30.91	306 44 10.0 8.0	I A 42.990	5 16 39.08	14 15 8.89	14 1103
43	9.1	35.5	37.7	39.7	41.8	44.0	c	16 39.74	306 44 " "	III C 43.020	5 16 47.90	14 24 51.66	14 1104
44	9.2	1.0	3.2	5.3	7.4	9.6	c	18 5.30	307 8 10.0 8.1	III C 43.390	5 18 13.50	14 0 43.84	14 1115
45	9.5	39.4	41.6	43.8	46.1	48.1	c	18 43.80	307 8 " "	III B 40.220	5 18 52.00	13 58 32.02	14 1118
46	9.3	22.8	25.0	27.2	29.2	31.4	c	19 27.12	307 8 " "	III B 39.930	5 19 35.32	13 58 37.85	14 1121
47	9.0	29.6	31.8	34.0	36.2	38.1	c	20 33.94	307 8 " "	III A 48.060	5 20 42.16	13 49 33.56	13 1147
48	8.1	57.8	59.8	2.0	4.3	6.5	c	21 2.08	306 58 10.0 8.0	V B 44.670	5 21 10.26	14 7 9.51	14 1130
49	8.4	34.8	36.9	39.0	41.2	43.4	c	21 39.06	306 58 " "	III A 41.900	5 21 47.26	14 1 32.68	14 1132
50	8.0	9.0	11.0	13.0	15.0	16.9	e	21 43.48	306 58 " "	V B 41.780	5 21 51.66	−14 8 5.24	−14 1133

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
51	8.5	5.0	7.2	9.2	11.4	13.5	c	26 9.26	307	14	9.7	6.6	III	42.490	5 26 17.48	−13 48 38.49	−13 1171
52	9.3	19.0	21.0	23.2	25.4	27.6	c	27 23.24	307	14	"	"	III B	47.700	5 27 31.46	13 50 12.25	13 1176
53	8.9	6.7	8.8	11.0	13.1	15.2	c	28 10.96	307	14	"	"	III B	44.440	5 28 19.16	13 51 15.11	13 1180
54	9.2	37.6	39.8	41.7	43.5	45.9	a	32 11.42	305	58	10.0	7.2	I B	48.860	5 32 19.50	15 5 53.36	15 1098
55	8.7	32.8	35.0	36.8	38.6	41.0	a	33 6.57	305	58	"	"	I C	47.680	5 33 14.64	15 9 29.63	15 1101
56	9.3	49.3	51.6	53.4	55.3	57.5	a	33 23.13	305	58	"	"	I A	46.405	5 33 31.22	15 0 12.25	15 1104
57	8.9	44.7	46.8	49.0	51.0	52.9	e	35 19.27	306	6	10.0	7.2	VII	47.980	5 35 27.38	14 55 1.92	14 1201
58	8.6	36.2	38.2	40.5	42.6	44.7	c	36 40.44	306	36	10.0	8.1	V	45.390	5 36 48.60	14 25 49.00	14 1208
59	9.1	41.5	43.5	45.3	47.1	49.5	a	38 15.06	306	16	10.0	8.0	I	44.240	5 38 23.18	14 46 9.85	14 1216
60	9.1	18.5	20.8	23.0	25.0	27.0	c	38 22.86	306	16	"	"	III A	40.335	5 38 30.98	−14 44 10.98	−14 1217
61	9.0	1.0	3.1	5.2	7.5	9.6	c	39 5.28	306	16	"	"	III A	44.290	5 39 13.42	−14 42 55.31	−14 1221
62	9.0	17.6	19.7	21.8	24.1	26.2	c	42 21.88	306	28	10.0	7.5	III A	45.140	5 42 30.04	14 30 39.85	14 1233
63	6.0	51.5	53.6	55.7	57.8	0.0	c	44 55.72	306	28	"	"	III A	44.830	5 45 3.88	14 30 46.73	14 1251
64	.....	15.6	17.7	20.0	22.0	26.2	$c_2 d_1$	45 17.74	306	28	"	"	....	....	5 45 25.88	14 38 0	14 1252
65	9.3	38.4	40.6	42.7	44.8	46.9	c	45 42.68	306	28	"	"	V C	48.170	5 45 50.82	14 39 25.68	14 1255
66	9.5	13.7	15.9	17.8	19.8	21.7	e	46 48.21	306	28	"	"	V C	48.440	5 46 56.36	14 39 20.90	14 1261
67	8.2	47.5	49.5	51.7	53.8	56.0	c	47 51.70	306	28	"	"	V	42.430	5 47 59.86	14 34 50.63	14 1267
68	5.5	38.7	40.7	43.0	45.1	47.2	c	51 42.94	306	50	10.0	7.4	III	47.670	5 51 51.14	14 11 9.08	14 1286
69	9.4	15.6	17.8	19.7	22.0	24.1	c	52 19.84	307	8	10.0	7.9	III	47.740	5 52 28.08	13 53 6.83	13 1310
70	9.0	16.4	18.5	20.6	22.8	24.9	c	55 20.64	307	4	10.0	8.2	III	44.790	5 55 28.86	−13 58 4.58	−13 1316
71	9.2	35.7	37.8	40.0	42.1	44.2	c	55 39.96	307	4	"	"	III B	45.030	5 55 48.18	−14 1 13.39	−14 1304
72	9.1	20.0	21.9	24.2	26.4	28.6	c	56 24.22	306	32	10.0	7.0	V B	50.500	5 56 32.40	14 31 32.41	14 1307
73	7.0	48.5	50.7	52.7	55.0	57.3	c	57 52.84	306	32	"	"	III	45.770	5 58 1.02	14 29 48.91	14 1315
74	8.0	26.7	28.8	31.0	33.2	35.3	c	59 31.00	306	58	10.0	8.0	III	42.410	5 59 39.22	14 4 52.19	14 1322
75	8.5	48.8	51.0	53.0	55.3	57.2	c	59 53.06	306	58	"	"	III A	42.420	6 0 1.30	14 1 36.75	14 1324
76	8.9	9.6	11.6	13.9	16.0	20.4	$c_2 d_1$	0 11.74	306	58	"	"	V B	46.480	6 0 19.96	14 6 49.15	14 1326
77	8.2	8.2	10.3	12.5	14.6	16.7	c	3 12.46	306	48	10.0	7.6	III	42.420	6 3 20.68	14 14 54.05	14 1341
78	8.0	23.7	25.7	28.0	30.2	32.3	c	4 27.98	307	0	10.0	7.6	III	42.390	6 4 36.22	14 2 54.48	14 1347
79	9.3	4.1	6.4	8.6	10.7	13.0	c	7 8.56	305	54	10.0	7.5	III B	41.160	6 7 16.68	15 12 35.76	15 1305
80	8.7	17.8	19.8	22.0	24.2	26.4	c	8 22.04	305	54	"	"	III B	44.550	6 8 30.18	−15 11 31.16	−15 1308
81	8.7	40.6	42.8	44.9	47.0	49.2	c	8 44.90	305	54	"	"	V	47.860	6 8 53.04	−15 7 15.81	−15 1313
82	9.0	11.4	13.5	15.6	17.8	20.0	c	11 15.66	306	38	10.0	8.1	III	46.050	6 11 23.88	14 23 47.54	14 1379
83	8.9	30.2	32.5	34.6	36.7	38.9	c	12 34.58	306	38	"	"	III B	44.190	6 12 42.80	14 27 37.01	14 1387
84	9.1	28.2	30.4	32.1	33.9	36.2	a	14 1.86	306	14	10.7	8.8	I B	40.320	6 14 10.04	14 52 50.66	14 1398
85	8.0	3.6	5.6	7.7	10.0	12.1	c	14 7.80	306	14	"	"	III	44.780	6 14 15.98	14 48 13.50	14 1399
86	6.8	10.7	12.8	15.0	17.1	19.3	c	15 14.98	307	0	10.0	8.3	....	....	6 15 23.26	13 56 59	13 1450
87	8.6	42.0	44.0	46.2	48.4	50.5	c	15 46.22	307	0	"	"	V C	43.230	6 15 54.48	14 9 8.31	14 1409
88	8.0	27.7	29.3	33.5	35.8	37.8	$b_2 c_3$	16 37.81	307	0	"	"	III A	41.430	6 16 46.08	14 0 1.57	13 1457
89	8.4	53.2	55.3	57.4	59.5	1.6	c	16 57.40	306	2	10.0	7.1	V	41.040	6 17 5.58	15 1 29.47	15 1358
90	9.2	34.8	37.0	38.8	40.7	42.7	e	17 9.17	306	2	"	"	VII B	44.360	6 17 17.34	−15 3 40.67	−15 1360
91	9.1	24.5	26.7	28.8	31.0	33.0	c	18 28.80	306	2	"	"	III B	41.240	6 18 36.96	−15 4 38.16	−15 1364
92	6.0	4.4	6.5	8.7	10.8	15.0	$c_2 d_1$	19 6.52	306	2	"	"	III	42.130	6 19 14.70	15 1 7.99	14 1428
93	.....	52.9	55.2	57.2	59.0	0.9	e	20 27.41	306	2	"	"	VII B	39.840	6 20 35.58	[15 5 8.64]	15 1377
94	8.8	55.2	57.5	59.5	1.4	.....	e	21 29.73	306	2	"	"	VII B	44.370	6 21 37.90	15 3 42.04	15 1381
95	.....	36.5	40.7	42.2	44.9	59.8	$c_5 e_2$	22 32.13	306	2	"	"	VI (B)	43.030	6 22 40.32	15 4 7.49	15 1387
96	9.2	29.3	31.3	33.5	35.8	37.8	c	24 33.54	306	42	10.0	7.9	III A	43.140	6 24 41.80	14 17 32.71	14 1466
97	9.0	0.8	2.8	4.9	7.2	9.2	c	25 4.98	306	42	"	"	V A	42.360	6 25 13.24	[14 17 49.38]	14 1471
98	9.1	22.3	24.4	26.4	28.8	30.9	c	25 26.56	306	42	"	"	V	41.190	6 25 34.82	14 21 27.16	14 1473
99	9.5	51.0	53.0	55.3	57.5	59.5	c	25 55.26	306	42	"	"	V	40.850	6 26 3.52	14 21 33.88	14 1477
100	8.6	20.7	22.7	26.9	28.5	31.2	$c_4 d_3$	26 18.45	306	42	"	"	VI B	39.690	6 26 26.72	−14 25 10.48	−14 1481
101	9.0	0.4	2.6	4.5	6.4	8.2	e	27 34.88	306	42	"	"	VII C	44.320	6 27 43.14	−14 26 54.89	−14 1487
102	.....	56.7	58.8	0.7	2.5	4.7	a	29 30.46	305	38	10.0	7.1	III C	49.260	6 29 38.62	15 29 22.35	15 1431
103	9.2	30.0	32.0	34.0	35.8	38.0	a	30 3.72	305	38	"	"	I	50.080	6 30 11.90	15 22 39.07	15 1435
104	8.3	12.0	14.1	16.3	18.5	20.7	c	30 16.32	305	48	10.0	7.8	III	42.650	6 30 24.50	15 15 2.42	15 1438
105	8.3	6.4	8.5	10.6	12.8	15.0	c	33 10.66	306	42	10.0	8.0	III B	48.900	6 33 18.96	14 22 13.88	14 1515
106	8.6	7.3	9.4	11.5	13.7	15.9	c	41 11.56	306	42	"	"	III B	45.560	6 41 19.88	14 23 20.82	14 1572
107	7.5	47.1	49.2	51.2	53.5	55.7	c	41 51.34	306	42	"	"	III B	40.260	6 41 59.66	14 25 2.79	14 1579
108	9.1	3.8	6.0	7.8	9.6	12.0	a	49 37.42	307	0	10.0	8.0	I B	40.240	6 49 45.80	14 7 3.26	14 1633
109	8.0	30.7	32.8	34.6	36.4	38.8	a	50 4.23	307	0	"	"	I	46.900	6 50 12.62	14 1 42.49	13 1722
110	9.2	57.6	59.7	1.8	3.7	5.5	e	52 32.12	306	30	10.0	7.0	VII B	45.920	6 52 40.46	−14 35 21.91	−14 1659
111	9.1	33.6	35.8	38.0	40.2	42.2	c	57 37.96	305	54	10.0	7.0	III	49.670	6 57 46.28	−15 6 57.40	−15 1610
112	9.1	35.1	37.3	39.4	41.7	43.8	c	58 39.46	305	54	"	"	III	50.920	6 58 47.80	15 6 33.77	15 1620
113	8.7	3.2	5.4	7.5	9.7	11.9	c	59 7.54	305	54	"	"	III	45.340	6 59 15.88	15 8 21.02	15 1626
114	8.6	27.5	29.4	31.6	33.9	35.9	c	59 31.66	305	54	"	"	V B	48.170	6 59 40.00	15 10 41.70	15 1629
115	8.8	14.9	17.1	19.3	21.5	23.7	c	0 19.30	305	54	"	"	III C	47.120	7 0 27.62	15 14 13.50	15 1636
116	9.4	34.3	36.4	38.5	40.7	42.8	c	3 38.54	306	18	10.0	7.5	III	43.640	7 3 46.94	14 44 53.67	14 1728
117	8.9	13.7	15.8	18.0	20.3	22.4	c	4 18.04	306	18	"	"	III B	45.010	7 4 26.44	14 47 40.91	14 1732
118	9.0	23.4	25.5	27.7	29.8	32.0	c	5 27.68	306	42	10.0	7.7	III	42.210	7 5 36.12	14 21 20.39	14 1743
119	8.7	20.0	22.0	24.2	26.3	28.6	c	7 24.22	306	24	10.0	7.2	III	46.450	7 7 32.64	14 38 0.85	14 1763
120	8.5	14.8	16.9	19.0	21.3	23.3	c	8 19.06	306	24	"	"	III B	41.280	7 8 27.48	−14 42 53.72	−14 1774
121	9.1	14.4	16.8	19.0	21.3	23.4	c	16 18.98	306	34	10.0	7.6	V A	38.170	7 16 27.46	−14 27 28.19	−14 1849
122	8.6	14.5	16.7	18.7	21.0	23.2	c	17 18.82	306	34	"	"	III B	45.220	7 17 27.30	14 31 40.39	14 1864
123	9.1	45.3	47.5	49.6	51.8	53.9	c	18 49.62	306	34	"	"	III C	47.290	7 18 58.12	14 34 13.09	14 1874
124	8.9	20.2	22.3	24.3	26.8	28.9	c	19 24.50	306	34	"	"	V B	42.330	7 19 33.00	−14 32 38.11	−14 1881

Reduction Elements. Zone 160.

1895.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
December 10.4....	−0. 035	+0. 228	+0. 206	−0. 057	+0. 246	+0. 208
10.6....	−0. 079	+0. 265	+0. 210			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	*r*⁶ Eridani		*γ* Eridani		Lalande 7685		53 Eridani		19 Canis Majoris		Piazzi VI. 303	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	297 28 8. 90		307 14 8. 85		302 42 8. 80		306 32 8. 95		301 2 8. 25		295 46 8. 45	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq......	48. 450	6 43. 73		5 20. 19	46. 060	5 58. 79	43. 605	5 11. 50		5 46. 85		6 4. 71
II | Red. to Mer......	. 470	0. 23	44. 065	0. 12	. 130	0. 18	. 645	0. 14	45. 480	0. 17	46. 390	0. 22
VI | Inclination	. 590		. 220	−0. 67	. 310		. 810		. 610	−0. 67	. 555	−0. 67
VII | Refraction	. 640	1 56. 4	. 260	1 20. 0	. 280	1 34. 5	. 855	1 22. 1	. 625	1 40. 9	. 565	2 5. 4

	29 Canis Majoris		Piazzi VII. 116	
	° ′ ″		° ′ ″	
CIRCLE READING.	296 42 9. 65		309 42 8. 95	
	r	′ ″	r	′ ″
I | Microm. Eq......		4 13. 42	42. 255	4 45. 87
II | Red. to Mer......		0. 33	. 325	0. 11
VI | Inclination		−2. 01	. 455	
VII | Refraction	40. 700	2 0. 6	. 535	1 13. 3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
5 H. Camelopardalis.	3 39 27. 17	11	+0. 13	[−1. 47]	32 4	....
*r*⁶ Eridani...........	3 42 25. 19	11	+0. 26	−1. 44	297 32 56. 5	16. 7
γ Eridani...........	3 53 13. 35	11	+0. 26	−1. 49	307 18 8. 5	17. 5
Lalande 7685......	4 2 0. 05	11	+0. 26	−1. 49	302 46 33. 3	17. 0
53 Eridani...........	4 33 27. 85	11	+0. 26	−1. 54	306 35 58. 5	17. 1
19 Canis Majoris.....	6 51 9. 49	11	+0. 26	−1. 45	301 6 13. 7	16. 6
Piazzi VI. 303	6 54 22. 78	11	+0. 26	−1. 37	295 50 7. 3	17. 9
29 Canis Majoris.....	7 14 23. 08	11	+0. 26	−1. 41	296 44 20. 8	16. 7
Piazzi VII. 116	7 23 0. 83	11	+0. 26	−1. 46	309 45 41. 6	16. 4
λ Ursae Minoris S. P .	7 25 36. 43	3	+3. 94	[−1. 31]	52 6	....

h 4. 048............*dt*...................... s −1. 490

Hourly rate .... +0. 0223

Adopted Equator Point......... 321° 6′ 16″. 99

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 44	29. 632	23. 1	22. 3
4 30	29. 628	22. 8	21. 7
5 29	29. 614	22. 2	21. 3
6 31	29. 584	21. 8	21. 3
7 30	29. 576	22. 2	21. 2

Notes.

24. Quite red.

86, 87, 100, 19 Canis Majoris, 29 Canis Majoris. Ice on levers.

108. Close double, mean observed.

λ Ursae Minoris S. P. Images good; seeing good

Z. D. Micrometer froze up several times.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0				*D* = Z. D. N. to 1895.0				*R*		
			305°	306°	307°	308°	305°	306°	307°	308°	305° 30′	306° 30′	307° 30′
°	s	h m	s	s	s	s	″	″	″	″	″	″	″
305	+0. 265	3 30	.....	+9. 645	+9. 735	+9. 822	.....	−18. 38	−18. 55	−18. 72	85. 39	82. 34	79. 41
306	0. 265	4 0	.....	9. 484	9. 580	9. 674	.....	17. 29	17. 41	17. 53	85. 47	82. 41	79. 49
307	0. 265	4 30	.....	9. 368	9. 467	9. 567	.....	15. 93	16. 01	16. 09	85. 55	82. 49	79. 56
308	+0. 264	5 0	.....	9. 298	9. 401	9. 503	.....	14. 31	14. 35	14. 38	85. 55	82. 49	79. 56
		5 30	.....	9. 276	9. 380	9. 485	.....	12. 48	12. 47	12. 46	85. 55	82. 49	79. 56
		6 0	+9. 198	9. 303	9. 409	9. 511	−10. 52	10. 46	10. 41	10. 35	85. 51	82. 45	79. 52
		6 30	9. 274	9. 378	9. 480	9. 580	8. 39	8. 29	8. 20	8. 09	85. 47	82. 41	79. 49
		7 0	9. 399	9. 498	9. 597	+9. 693	6. 13	5. 99	5. 85	− 5. 72	85. 47	82. 41	79. 49
		7 30	+9. 572	+9. 664	+9. 756	.....	− 3. 81	− 3. 63	− 3. 45	.....	85. 49	82. 43	79. 51

1895 DECEMBER 16. ZONE 161. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	4.5	15.4	17.5	19.6	21.8	23.9	c	8 19.64	304 46 10.0 6.2	III B 43.900	5 8 26.33	−16 19 24.36	−16 1072
2	9.0	24.9	27.2	29.3	31.4	33.7	c	9 29.30	304 46 " "	III 48.870	5 9 35.99	16 14 36.08	16 1079
3	9.1	6.6	8.8	10.7	12.7	14.6	e	13 40.83	304 22 10.0 6.0	VII A 44.850	5 13 47.48	16 36 43.59	16 1097
4	9.2	57.0	59.1	1.2	3.1	4.9	e	14 31.18	304 22 " "	V C 48.040	5 14 37.81	16 45 22.67	16 1104
5	9.3	11.7	13.8	15.9	18.2	20.4	c	17 16.00	304 10 10.0 7.0	III 43.660	5 17 22.61	16 52 20.52	16 1115
6	9.1	58.9	0.9	3.1	5.3	7.4	c	19 3.12	304 30 10.0 6.1	III A 41.140	5 19 9.77	16 29 53.49	16 1125
7	9.0	32.6	34.9	37.0	39.2	41.4	c	19 37.02	304 30 " "	III 42.660	5 19 43.67	16 32 39.97	16 1128
8	7.8	18.3	20.6	22.7	24.9	27.0	c	22 22.70	304 38 10.0 6.4	III 41.660	5 22 29.36	16 24 59.57	16 1146
9	9.0	13.8	16.0	18.1	20.4	22.5	c	25 18.16	304 24 10.0 6.6	III C 43.030	5 25 24.78	16 45 1.26	16 1154
10	8.9	25.7	28.0	30.1	32.4	34.5	c	26 30.14	304 24 " "	III A 41.980	5 26 36.77	−16 35 40.22	−16 1160
11	......	49.4	51.3	53.2	55.6	11.2	a_2 b_2	27 21.35	304 24 " "	III C 44.440	5 27 27.97	−16 44 34.97	−16 1165
12	9.1	58.9	1.3	3.1	5.1	6.8	e	27 33.02	303 24 10.7 7.8	VII 43.945	5 27 39.54	17 38 23.17	17 1164
13	8.9	31.9	34.0	36.2	40.4	42.1	c_3 d_2	28 31.85	304 2 10.0 6.1	V 43.280	5 28 38.44	17 0 34.21	17 1168
14	8.8	5.3	7.5	9.7	11.8	14.0	c	31 9.66	304 22 10.0 6.6	III 47.090	5 31 16.29	16 39 19.38	16 1179
15	8.5	47.0	49.1	51.2	53.5	55.7	c	31 51.30	304 22 " "	III C 47.040	5 31 57.91	16 45 46.84	16 1182
16	8.3	41.2	43.3	45.4	47.7	49.8	c	32 45.48	304 22 " "	III C 47.510	5 32 52.09	16 45 38.16	16 1185
17	8.2	3.2	5.3	7.2	9.0	11.3	a	34 37.35	303 8 10.0 5.6	I 47.400	5 34 43.85	17 53 17.88	17 1198
18	7.0	11.1	13.4	15.4	17.4	19.2	e	34 45.24	303 8 " "	VII B 54.530	5 34 51.74	17 54 18.79	17 1199
19	8.0	35.7	37.2	41.5	43.7	45.8	b_2 c_3	34 45.86	303 8 " "	III 48.240	5 34 52.36	17 53 3.34	17 1200
20	......	47.4	49.6	51.9	54.0	58.4	c_2 d_1	34 49.66	303 8 " "	V B 51.130	5 34 56.16	−17 55 22.76	−17 1203
21	6.8	3.1	5.3	7.3	9.6	11.9	c	37 7.44	304 20 10.0 6.5	III B 40.900	5 37 14.06	−16 46 33.89	−16 1208
22	8.9	40.8	43.1	45.2	47.4	49.7	c	37 45.24	304 20 " "	V C 48.540	5 37 51.86	16 47 21.57	16 1214
23	8.9	13.8	15.9	18.0	19.9	21.9	e	37 48.03	304 20 " "	VII 41.530	5 37 54.66	16 43 11.21	16 1215
24	8.6	10.0	12.1	14.2	16.4	18.6	c	39 14.26	304 40 10.0 7.0	V 43.530	5 39 20.92	16 22 30.88	16 1221
25	9.0	8.5	10.5	12.8	15.0	17.1	c	40 12.78	303 42 10.0 5.8	V C 41.410	5 40 19.33	17 27 41.83	17 1230
26	8.6	44.2	46.5	48.3	50.3	52.0	e	40 18.30	303 42 " "	VII A 42.650	5 40 24.86	17 17 38.05	17 1231
27	8.6	9.5	11.8	13.9	16.1	18.4	c	41 13.94	303 42 " "	V C 42.320	5 41 20.49	17 27 24.74	17 1235
28	8.7	29.1	31.4	33.5	35.9	37.9	c	42 33.56	304 36 10.0 6.3	III 43.180	5 42 40.22	16 26 38.05	16 1245
29	8.9	14.7	16.7	18.9	21.1	23.2	c	44 18.92	304 28 10.0 6.5	III B 42.715	5 44 25.56	16 38 1.27	16 1259
30	8.7	57.8	59.9	2.1	4.4	6.5	c	45 2.14	304 28 " "	III A 42.490	5 45 8.79	−16 31 37.14	−16 1263
31	......	5.7	8.0	9.9	11.6	14.0	a	47 39.94	303 26 10.0 6.2	I 49.105	5 47 46.48	−17 34 48.68	−17 1271
32	9.0	47.4	49.5	51.7	54.0	56.1	c	47 51.74	303 26 " "	III B 46.760	5 47 58.27	17 38 48.61	17 1272
33	8.7	8.2	10.4	12.5	14.8	16.8	c	51 12.54	304 16 10.0 6.5	III B 43.420	5 51 19.16	16 49 50.98	16 1301
34	8.4	33.8	36.0	38.1	40.3	42.4	c	51 38.12	304 16 " "	III A 40.270	5 51 44.75	16 44 22.88	16 1302
35	8.0	55.1	57.2	59.4	1.5	3.7	c	56 59.38	304 38 10.0 7.0	III 45.300	5 57 6.05	16 24 2.26	16 1333
36	8.7	57.0	59.1	1.3	3.5	5.9	c	0 1.36	304 26 10.0 6.0	III 43.670	6 0 8.01	16 36 35.83	16 1347
37	8.9	3.6	5.6	7.5	9.3	11.7	a	2 37.67	303 18 10.0 6.1	I 41.710	6 2 44.20	17 45 16.70	17 1359
38	8.7	40.1	42.3	44.5	46.7	48.8	c	2 44.48	303 18 " "	III B 42.510	6 2 51.00	17 48 16.25	17 1360
39	8.4	46.7	48.9	51.0	53.2	55.3	c	6 51.02	304 14 10.0 6.7	III 44.580	6 6 57.67	16 48 21.22	16 1387
40	8.8	0.6	2.8	4.9	7.1	9.4	c	8 4.96	304 14 " "	III 48.300	6 8 11.61	−16 47 10.28	−16 1396
41	8.7	24.7	26.9	29.1	31.2	33.4	c	8 29.06	304 14 " "	V B 43.190	6 8 35.71	−16 52 3.37	−16 1399
42	6.4	29.1	31.1	33.3	35.6	37.7	c	11 33.36	304 28 10.0 6.7	III 42.450	6 11 40.04	16 35 3.09	16 1415
43	9.2	15.3	17.5	19.5	21.8	24.0	c	16 19.62	302 58 10.0 6.5	III B 42.570	6 16 26.14	18 8 21.15	18 1388
44	7.0	3.0	5.1	7.3	9.6	11.6	c	17 7.32	302 58 " "	V B 46.850	6 17 13.85	18 7 0.85	18 1391
45	8.8	17.5	19.9	22.1	24.3	26.5	c	17 22.06	302 58 " "	VI 51.570	6 17 28.60	18 2 17.43	18 1393
46	8.5	38.1	40.3	42.4	44.7	46.9	c	18 42.48	302 58 " "	V C 46.690	6 18 49.01	18 10 17.07	18 1404
47	8.0	41.4	43.5	45.6	47.9	50.1	c	19 45.70	304 52 10.0 7.3	III 45.015	6 19 52.44	16 10 15.25	16 1467
48	9.0	12.6	14.7	16.8	18.8	20.6	e	19 46.92	304 52 " "	VII 45.205	6 19 53.66	16 10 14.10	16 1468
49	8.7	17.7	19.8	21.9	24.1	26.4	c	21 21.98	304 28 10.0 6.8	III C 45.690	6 21 28.67	16 40 30.72	16 1479
50	8.0	52.2	54.4	56.6	58.8	0.9	c	21 56.58	304 28 " "	III 50.410	6 22 3.29	−16 32 34.10	−16 1483
51	9.0	7.4	9.6	11.8	14.0	16.1	c	22 11.78	304 28 " "	VI C 45.950	6 22 18.47	−16 40 27.70	−16 1484
52	8.5	15.5	17.6	19.9	22.1	24.2	c	26 19.86	304 50 10.0 6.8	III 43.210	6 26 26.61	16 12 52.68	16 1506
53	8.9	52.4	54.6	56.7	58.9	1.0	c	26 56.72	304 50 " "	III 47.390	6 27 3.48	16 11 32.67	16 1514
54	8.3	21.1	23.3	25.3	27.6	29.6	c	32 25.38	304 50 " "	III B 42.480	6 32 32.15	16 16 22.23	16 1542
55	7.5	57.0	59.0	1.3	3.5	5.7	c	34 1.30	304 18 10.0 6.7	III B 46.590	6 34 8.02	16 47 5.78	16 1554
56	8.9	19.5	21.6	23.8	26.1	28.1	c	34 23.82	304 18 " "	III 48.700	6 34 30.55	16 43 12.11	16 1558
57	8.6	42.0	44.2	46.4	48.7	52.8	c_2 d_1	34 44.24	304 28 10.0 6.3	V 47.010	6 34 50.99	16 33 45.63	16 1560
58	8.9	51.4	53.5	55.8	57.8	59.9	c	38 55.68	304 6 9.6 5.9	III C 43.090	6 39 2.39	17 3 28.97	17 1598
59	9.1	6.5	8.7	10.9	13.1	15.2	c	39 10.88	304 6 " "	V 45.150	6 39 17.60	16 56 24.62	16 1583
60	8.8	26.2	28.6	30.7	35.0	36.6	c_3 d_2	40 26.35	304 6 " "	V 47.265	6 40 33.08	−16 55 44.47	−16 1590
61	6.5	3.0	5.2	7.2	9.5	11.7	c	41 7.32	304 6 " "	V C 40.490	6 41 14.04	−17 4 20.82	−17 1611
62	8.6	52.1	54.3	56.4	58.6	0.7	c	41 56.42	304 6 " "	III 47.340	6 42 3.16	16 55 42.23	16 1598
63	8.7	13.6	15.7	17.6	19.4	21.7	a	45 47.58	304 12 10.0 6.4	I A 37.690	6 45 54.34	16 49 30.92	16 1623
64	7.0	43.2	45.5	47.6	49.9	52.0	c	45 47.64	304 12 " "	III C 41.220	6 45 54.38	16 58 6.53	16 1624
65	8.9	13.0	15.3	17.4	19.7	21.8	c	50 17.44	304 36 10.0 6.2	III A 39.890	6 50 24.26	16 24 50.76	16 1652
66	8.8	43.6	45.7	47.9	50.1	52.3	c	50 47.92	304 36 " "	III B (39).060	6 50 54.73	16 31 35.60	16 1655
67	8.9	4.6	6.8	9.0	11.1	13.4	c	51 8.98	304 36 " "	III A 41.020	6 51 15.80	16 24 29.37	16 1658
68	8.5	31.3	33.5	35.8	38.0	40.1	c	52 35.74	303 36 10.0 6.2	III 47.730	6 52 42.46	17 25 39.99	17 1699
69	8.0	52.8	54.9	57.0	59.2	1.4	c	52 57.06	304 18 10.0 7.5	V (42).040	6 53 3.86	16 45 27.57	16 1677
70	9.2	44.7	47.0	49.1	51.4	53.6	c	53 49.16	303 54 10.0 6.1	III 45.310	6 53 55.92	−17 8 25.88	−17 1707

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
71	8.0	49.8	51.9	53.9	55.8	58.1	a	57 23.99	303 36 10.0 6.0	I B 44.190	6 57 30.73	−17 30 1.33	−17 1733
72	9.0	26.4	28.6	30.6	32.9	35.1	c	57 30.72	303 36 “ “	III C 43.780	6 57 37.45	17 33 23.92	17 1737
73	8.0	3.5	5.7	8.0	10.1	12.1	c	58 7.88	303 36 “ “	III 46.260	6 58 14.63	17 26 10.28	17 1743
74	9.4	25.6	27.8	29.9	32.0	34.2	c	58 29.90	303 36 “ “	V 41.670	6 58 36.65	17 27 39.85	17 1748
75	8.7	30.6	32.9	34.9	37.2	39.3	c	0 34.98	303 36 “ “	III 41.980	7 0 41.74	17 27 33.31	17 1766
76	9.3	20.3	22.4	24.2	26.4	28.5	a	1 54.46	303 36 “ “	I C 42.120	7 2 1.22	17 33 55.95	17 1778
77	9.2	53.9	56.0	58.0	59.9	2.2	a	2 28.08	303 36 “ “	I 41.230	7 2 34.86	17 27 46.80	17 1782
78	9.4	59.3	1.3	3.2	5.1	7.1	a	3 33.27	303 36 “ “	I A 42.920	7 3 40.06	17 23 59.14	17 1789
79	8.6	18.2	20.3	22.3	24.1	26.5	a	3 52.35	303 36 “ “	I A 43.340	7 3 59.14	17 23 51.18	17 1792
80	9.3	56.9	59.0	1.2	3.5	5.5	c	4 1.22	303 36 “ “	III B (42).490	7 4 8.00	−17 30 38.01	−17 1795
81	9.1	30.1	32.3	34.3	36.4	38.1	e	4 4.25	303 36 “ “	VII 39.090	7 4 11.03	−17 28 32.44	−17 1798
82	9.3	9.9	12.2	14.2	16.0	17.9	e	4 44.05	303 36 “ “	VII 38.950	7 4 50.84	17 28 35.36	17 1803
83	8.6	43.2	45.6	47.5	49.5	51.5	e	5 17.47	303 36 “ “	VII B 38.290	7 5 24.25	17 32 1.94	17 1809
84	8.5	51.3	53.3	55.3	57.2	59.6	a	14 25.49	303 12 10.0 5.8	I ( ) 41.450	7 14 32.29	17 51 48.22	17 1913
85	8.7	31.4	33.7	35.8	38.1	40.3	c	14 35.86	303 12 “ “	III B 43.490	7 14 42.65	17 54 24.02	17 1914
86	8.8	9.8	11.8	13.8	15.6	17.9	a	34 43.70	304 36 10.7 7.7	I 43.320	7 34 50.76	16 27 12.77	16 2068
87	8.2	28.5	30.6	32.5	34.3	36.5	a	35 2.59	303 22 10.0 6.5	III (A) 42.055	7 35 9.54	17 38 28.62	17 2081
88	9.1	9.0	11.1	13.1	15.5	17.7	c	35 13.28	303 22 “ “	V 45.530	7 35 20.23	17 40 38.73	17 2083
89	9.3	47.6	49.6	51.7	54.0	56.2	c	35 51.82	303 22 “ “	III A 42.725	7 35 58.78	17 38 16.02	17 2091
90	9.3	17.8	20.2	22.2	24.0	25.9	e	35 51.99	303 22 “ “	V B 46.830	7 35 58.94	−17 43 27.51	−17 2092
91	8.7	16.5	18.6	20.8	23.1	25.3	c	37 20.86	302 52 10.0 5.7	III 48.390	7 37 27.78	−18 9 45.44	−18 1969
92	8.9	42.9	44.9	46.9	48.8	51.0	a	38 17.10	302 52 “ “	I 45.720	7 38 24.02	18 10 35.44	18 1981
93	9.0	10.9	13.0	15.3	17.5	19.6	c	38 15.26	303 40 10.0 6.4	V C 50.420	7 38 22.25	17 27 30.92	17 2113
94	8.4	57.7	59.9	2.0	4.3	6.4	c	39 2.06	303 40 “ “	III A 45.050	7 39 9.07	17 19 31.38	17 2118
95	8.4	2.8	4.9	6.9	9.2	11.4	c	40 7.04	303 40 “ “	III B 41.390	7 40 14.04	17 27 10.74	17 2130
96	9.0	19.4	21.6	23.6	25.8	28.0	c	40 23.68	303 40 “ “	VI C 45.640	7 40 30.68	17 29 3.88	17 2133
97	9.0	25.3	27.5	29.6	31.8	33.9	c	41 29.62	303 40 “ “	III 45.070	7 41 36.64	17 22 47.22	17 2144
98	9.2	56.0	58.1	0.1	2.1	4.0	e	41 30.08	303 40 “ “	V B 45.650	7 41 37.09	17 25 50.94	17 2146
99	8.3	42.9	45.0	47.2	49.5	51.6	c	46 47.24	304 42 10.0 6.2	III 44.120	7 46 54.39	16 21 3.56	16 2162
100	8.7	41.7	43.8	46.0	48.3	50.4	c	47 46.04	304 42 “ “	III B 40.130	7 47 53.19	−16 25 33.77	−16 2168
101	9.3	39.4	41.5	43.7	45.9	48.1	c	1 43.72	304 0 10.0 5.3	III 42.610	8 1 50.93	−17 3 40.02	−16 2289
102	8.0	55.8	57.9	59.9	2.3	4.4	c	2 0.06	304 0 “ “	V A 42.045	8 2 7.27	17 0 37.05	16 2295
103	7.5	32.8	34.9	37.2	39.4	41.6	c	2 37.18	304 0 “ “	III 38.940	8 2 44.39	17 4 50.76	16 2304
104	8.9	31.1	33.3	35.5	37.7	39.8	c	4 35.48	304 0 “ “	III 41.085	8 4 42.71	17 4 10.14	16 2319
105	9.0	43.3	45.5	47.7	49.9	51.9	c	5 47.66	304 0 “ “	III B 50.030	8 5 54.90	17 4 32.11	16 2329
106	9.0	3.7	5.9	8.0	10.3	12.4	c	6 8.06	304 0 “ “	V B 46.280	8 6 15.30	17 5 45.74	16 2332
107	9.1	54.8	56.9	59.1	1.3	3.6	c	16 59.14	303 0 10.0 6.0	III 48.080	8 17 6.39	18 2 2.77	17 2462
108	8.9	4.9	7.0	8.9	10.9	13.0	a	23 38.95	303 58 10.0 6.8	I 45.310	8 23 46.33	17 4 52.28	16 2463
109	8.8	43.0	45.1	47.3	49.4	51.6	c	23 47.28	303 58 “ “	III 49.185	8 23 54.67	[17 3 39.47]	16 2464
110	9.0	53.0	55.0	57.1	58.8	1.2	a	25 27.03	303 58 “ “	I 49.160	8 25 34.43	−17 3 38.86	−16 2479
111	9.0	10.9	13.0	15.1	17.4	19.6	c	35 15.20	303 42 10.0 6.0	III 44.610	8 35 22.67	−17 21 11.72	−17 2603

Reduction Elements. Zone 161.

	OBSERVED.			ADOPTED.		
1895.	c	b	a	c	b	a
	s	s	s	s	s	s
December 16.4....	−0.196	+0.182	+0.130	−0.194	+0.186	+0.121
16.6....	−0.192	+0.189	+0.112			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ε Leporis		β Eridani		λ Eridani		τ Orionis		Piazzi VIII. 95		Bradley 1212	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	298 32 8.20		315 48 7.75		312 8 7.55		314 4 7.50		301 50 8.00		313 26 8.20	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	44.500	5 27.98		6 2.06		6 11.21	45.950	5 56.04	41.105	4 22.85	39.580	3 53.75
II	Red. to Mer......	.520	0.22	46.290	0.04		0.09	46.005	0.07	.125	0.19	.590	0.07
VI	Inclination	.635		.390	−0.67	46.820	−1.68	.120		.250		.750	
VII	Refraction.......	.695	1 52.0	.415	59.4	.865	1 7.5	.130	1 3.1	.285	1 38.9	.775	1 4.9

		Lalande 17333		15 Hydrae	
		° ′ ″		° ′ ″	
	CIRCLE READING.	302 40 8.25		314 14 8.20	
		r	′ ″	r	′ ″
I	Microm. Eq......	43.865	5 16.92	46.295	6 2.69
II	Red. to Mer......	.960	0.18	.310	0.07
VI	Inclination	44.100		.475	
VII	Refraction.......	.120	1 35.6	.510	1 3.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Ursae Minoris s. p.	4 56 29.02	11	−1.48	[−2.37]	58 50	....
ε Leporis	5 1 7.65	11	0.00	−2.44	298 35 44.4	16.6
β Eridani	5 2 48.18	11	+0.02	−2.42	315 53 9.8	17.2
λ Eridani	5 4 14.15	11	+0.02	−2.42	312 13 9.7	16.9
τ Orionis	5 12 37.38	11	+0.02	−2.42	314 9 0.5	17.1
Piazzi VIII. 95	8 26 54.06	11	+0.01	−2.33	301 52 52.1	16.0
Bradley 1212	8 30 27.25	11	+0.02	−2.37	313 28 57.1	17.0
Lalande 17333	8 42 4.56	11	+0.01	−2.33	302 43 49.8	16.9
15 Hydrae	8 46 31.30	11	+0.02	−2.38	314 19 8.0	16.4
76 Draconis s. p.	8 49 57.95	11	+1.48	[−2.38]	58 54	....

h		s
5.088	*dt*	−2.425
	Hourly rate	+0.0207

	° ′ ″
Adopted Equator Point	321 6 16.76

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 0	30.362	31.8	31.3
6 0	30.358	31.8	30.6
7 0	30.358	30.6	28.6
8 0	30.372	29.8	28.4
8 49	30.390	29.5	29.6

Notes.

τ Orionis. Images somewhat unsteady.

39. Images fairly steady.

58. Suspected double.

86. Faint companion, s. p.

110. Observed as one star; no companion seen.

76 Draconis, s. p. Seeing moderately good.

Images only slightly unsteady during this zone.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			D = Z. D. N. to 1895.0			R			
			303°	304°	305°	303°	304°	305°	302° 30′	303°	304°	305°
°	s	h m	s	s	s	″	″	″	″	″	″	″
303	−0.010	5 0	+8.926	+9.033	+9.140	−12.69	−12.75	−12.82	96.07	94.25	90.78	87.46
304	0.011	5 30	8.882	8.989	9.097	10.93	10.94	10.96	96.14	94.32	90.84	87.52
305	+0.012	6 0	8.890	9.000	9.107	8.97	8.95	8.93	96.21	94.38	90.91	87.58
		6 30	8.955	9.060	9.166	6.88	6.81	6.75	96.40	94.58	91.10	87.76
		7 0	9.070	9.172	9.273	4.68	4.57	4.45	96.63	94.80	91.31	87.96
		7 30	9.236	9.331	9.426	2.41	− 2.26	− 2.11	96.67	94.84	91.35	88.00
		8 0	9.451	9.539	9.626	− 0.11	+ 0.08	+ 0.27	96.69	94.86	91.37	88.02
		8 30	+9.707	+9.788	+9.866	+ 2.18	+ 2.41	+ 2.63	96.58	94.75	91.26	87.92
		9 0	.....	.....	.....	.....	.....	.....	96.47	94.65	91.16	87.82

1895 DECEMBER 22. ZONE 162. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.2	11.5	13.7	15.7	18.1	20.1	c	59 15.82	306 20 10.0	5.4	III	48.190	4 59 22.17	−14 40 37.47	−14 1028
2	8.6	42.9	44.9	46.7	48.6	50.8	a	59 16.45	306 20 "	"	I	44.430	4 59 22.80	14 41 48.14	14 1029
3	8.2	53.0	55.1	57.1	59.3	1.6	c	7 57.22	306 0 10.0	5.4	III B	46.970	5 8 3.50	15 4 18.28	15 971
4	9.0	30.5	32.7	34.8	37.0	39.2	c	8 34.84	306 0 "	"	III	47.880	5 8 41.12	15 0 47.74	15 973
5	9.3	43.2	45.4	47.5	49.7	51.8	c	9 47.52	306 0 "	"	III C	44.965	5 9 53.78	15 8 10.33	15 979
6	8.0	17.0	19.0	21.2	23.4	25.5	c	11 21.22	306 24 10.0	4.9	III	47.175	5 11 27.54	14 37 1.39	14 1080
7	8.4	36.1	38.2	40.3	42.6	44.6	c	16 40.36	305 54 10.0	5.8	III C	42.470	5 16 46.60	15 15 0.83	15 1018
8	8.8	10.9	13.0	15.1	17.3	19.4	c	18 15.14	305 54 "	"	III	47.645	5 18 21.38	15 6 55.90	15 1022
9	8.9	7.8	10.0	12.0	14.2	16.4	c	19 12.08	305 54 "	"	III B	43.450	5 19 18.32	15 11 30.04	15 1026
10	8.7	17.0	19.1	21.3	23.5	25.6	c	20 21.30	306 46 10.0	5.5	III C	46.320	5 20 27.62	−14 21 46.00	−14 1124
11	8.7	46.3	48.2	50.4	52.6	54.7	c	20 50.44	306 46 "	"	III A(44)	.800	5 20 56.78	−14 12 33.73	−14 1126
12	9.0	42.9	44.8	46.5	48.5	50.8	a	22 16.33	306 46 "	"	I C	43.320	5 22 22.64	14 22 42.88	14 1134
13	8.8	33.8	36.2	38.2	40.2	42.6	c	22 38.20	306 14 10.0	5.8	III	49.480	5 22 44.47	14 46 21.32	14 1136
14	9.2	12.7	14.8	16.9	19.0	21.2	c	23 16.92	306 14 "	"	III B	43.225	5 23 23.18	14 51 34.88	14 1141^1
15	9.3	43.7	46.1	48.0	49.9	51.7	e	23 18.29	306 14 "	"	VII B	43.405	5 23 24.55	14 51 34.34	14 1141^2
16	7.5	53.3	55.5	57.6	59.7	1.7	c	44 57.56	306 28 10.0	5.2	III A	44.600	5 45 3.83	14 30 47.39	14 1251
17	9.1	15.3	17.5	19.4	21.7	23.8	c	45 19.54	306 28 "	"	III B	42.310	5 45 25.80	14 38 0.14	14 1252
18	9.1	58.4	0.7	2.9	5.0	7.1	c	47 2.82	306 12 10.0	5.7	III C	45.470	5 47 9.04	14 56 13.57	14 1262
19	8.4	33.7	35.9	38.0	40.1	42.3	c	47 38.00	306 12 "	"	III	47.975	5 47 44.23	14 48 59.54	14 1266
20	8.6	25.9	28.0	29.9	32.2	34.4	c	0 30.08	306 44 10.0	6.0	III	44.500	6 0 36.35	−14 18 9.26	−14 1328
21	9.0	22.4	24.6	26.6	28.9	30.9	c	4 26.68	306 14 10.0	5.2	III	42.185	6 4 32.90	−14 48 56.95	−14 1346
22	8.7	8.9	11.0	13.2	15.5	17.6	c	7 13.24	306 36 10.5	6.4	III	45.510	6 7 19.51	14 25 52.23	14 1359
23	8.8	57.0	59.0	1.2	3.4	5.6	c	8 1.24	305 4 10.0	5.9	III B	42.955	6 8 7.33	16 1 59.92	16 1395
24	9.0	22.9	25.0	27.1	29.3	31.7	c	8 27.20	305 4 "	"	V A	41.840	6 8 33.30	15 55 54.27	15 1309
25	9.4	4.9	6.9	9.1	11.3	13.4	c	12 9.12	304 56 10.0	5.2	III	45.890	6 12 15.21	16 5 52.56	16 1417
26	9.3	20.5	22.7	24.8	27.0	29.3	c	12 24.86	304 56 "	"	V A	41.555	6 12 30.95	16 4 1.94	16 1418
27	8.6	46.6	48.8	50.8	53.1	55.1	c	13 50.88	306 28 10.0	5.9	III	46.710	6 13 57.14	14 33 32.45	14 1396
28	9.0	47.5	49.6	51.7	53.9	56.2	c	14 51.78	306 28 "	"	III B	44.705	6 14 58.02	14 37 24.58	14 1403
29	9.1	12.1	14.3	16.4	18.5	20.6	c	15 16.38	305 30 10.0	5.4	V	49.910	6 15 22.52	15 30 36.00	15 1347
30	9.1	55.1	57.0	59.4	1.4	3.6	c	15 59.30	305 30 "	"	V B	50.090	6 16 5.44	−15 33 46.30	−15 1352

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
31	8.9	33.4	35.5	37.7	39.8	42.1	c	16 37.70	305 30 10.0 5.4	III B 45.320	6 16 43.84	−15 35 16.53	−15 1356
32	8.0	26.0	28.2	30.3	32.6	34.6	c	17 30.34	305 30 " "	V B 40.520	6 17 36.47	15 36 50.51	15 1361
33	8.9	2.8	4.8	7.0	9.3	13.4	$c_2\ d_1$	18 4.89	305 46 10.0 5.7	V 47.870	6 18 11.06	15 15 15.22	15 1363
34	8.6	56.0	58.1	0.2	2.5	4.5	c	22 0.26	305 34 10.0 5.8	III 47.090	6 22 6.42	15 27 30.80	15 1385
35	9.0	57.0	59.2	1.2	3.4	5.6	c	23 1.28	305 18 10.0 5.8	III 48.320	6 23 7.41	15 43 8.38	15 1392
36	8.9	48.3	50.2	52.0	53.9	56.2	a	25 21.97	305 2 10.0 5.7	I 46.950	6 25 28.08	15 59 34.86	15 1406
37	8.0	47.3	49.5	51.6	53.8	55.8	c	25 51.60	306 8 10.0 6.0	III 48.210	6 25 57.84	14 53 8.88	14 1476
38	9.1	14.4	16.5	18.6	20.9	22.9	c	26 18.66	306 8 " "	III B 44.920	6 26 24.88	14 57 25.48	14 1479
39	8.7	44.0	46.2	48.3	50.2	52.0	e	26 18.57	306 20 10.0 5.5	VII A 39.680	6 26 24.83	14 40 39.85	14 1480
40	8.6	43.8	45.9	48.0	50.2	52.3	c	27 48.04	306 20 " "	III B 43.000	6 27 54.29	−14 46 2.51	−14 1489
41	8.6	35.0	37.3	39.4	41.6	43.7	c	28 39.40	306 20 " "	III B 48.430	6 28 45.66	−14 44 18.60	−14 1490
42	9.5	15.6	17.9	19.9	22.1	24.3	c	29 19.96	306 20 " "	V 43.290	6 29 26.21	14 42 45.53	14 1494
43	9.6	37.2	39.3	41.3	43.5	45.6	c	30 41.38	305 52 10.0 6.1	III 43.290	6 30 47.58	15 10 45.75	15 1441
44	9.0	52.7	54.9	57.0	59.3	1.4	c	30 57.06	305 52 " "	V 42.720	6 31 3.26	15 10 58.15	15 1444
45	9.4	22.8	25.1	27.0	28.8	30.7	e	30 57.24	305 52 " "	VII(B) 45.190	6 31 3.44	15 13 25.58	15 1445
46	9.3	38.6	40.8	42.9	45.2	47.4	c	33 42.98	305 26 10.0 6.2	III 42.090	6 33 49.14	15 37 11.14	15 1461
47	9.0	43.0	45.2	47.4	49.6	50.6	c	34 47.36	305 6 10.0 6.2	III C 46.960	6 34 53.48	16 2 5.32	15 1464
48	8.9	49.0	51.1	53.2	55.4	57.6	c	35 53.26	305 6 " "	III 48.465	6 35 59.39	15 55 10.60	15 1469
49	9.2	49.4	51.5	53.6	55.9	......	c	40 53.67	306 12 10.4 6.5	VII 42.270	6 40 59.93	14 51 10.02	14 1569
50	9.6	4.8	7.2	9.3	11.1	12.9	e	41 39.47	306 12 " "	VII A 39.010	6 41 45.74	−14 48 57.79	−14 1577
51	9.0	40.1	42.4	44.1	46.0	48.4	a	50 13.87	306 22 10.0 6.8	I B 43.190	6 50 20.16	−14 44 4.23	−14 1637
52	9.6	16.1	18.2	20.4	22.6	24.8	c	51 20.42	305 2 10.0 6.2	VII 45.360	6 51 26.58	16 0 18.27	15 1565
53	9.4	36.0	38.3	40.4	42.1	43.9	e	52 10.48	305 48 9.4 5.2	VII 42.660	6 52 16.72	15 15 8.82	15 1570
54	8.6	21.7	23.9	26.0	30.2	31.9	$c_3\ d_2$	53 21.73	306 22 10.0 5.6	V 42.600	6 53 28.03	14 41 6.99	14 1664
55	9.1	40.7	42.8	44.6	46.6	48.9	a	55 14.49	305 34 10.0 5.5	I 48.485	6 55 20.72	15 27 14.31	15 1593
56	9.1	20.7	23.0	25.1	27.4	29.5	c	55 25.14	304 30 10.0 6.1	V 46.210	6 55 31.26	16 32 4.01	16 1698
57	8.2	28.7	30.9	32.9	37.4	39.0	$c_3\ d_2$	58 28.74	305 8 10.0 5.6	V A 43.690	6 58 34.93	15 51 36.38	15 1617
58	9.4	56.5	58.5	0.3	2.4	4.5	a	58 30.30	305 8 " "	III C 39.855	6 58 36.47	16 2 30.12	15 1618
59	5.0	3.5	5.6	7.7	10.0	12.0	c	59 7.76	305 34 10.0 5.5	V 42.830	6 59 13.99	15 29 7.05	15 1625
60	9.5	1.2	3.1	5.4	7.6	11.9	$c_2\ d_1$	0 3.28	306 38 10.0 5.3	V 41.590	7 0 9.62	−14 25 28.02	−14 1704
61	8.9	55.6	57.8	59.8	1.7	3.6	e	0 29.98	305 20 10.0 5.5	VII 42.800	7 0 36.19	−15 43 9.97	−15 1637
62	8.5	41.0	42.9	44.9	46.7	49.0	a	3 14.69	305 30 10.0 5.9	I 44.410	7 3 20.93	15 32 35.25	15 1657
63	9.1	6.8	8.9	10.8	12.5	14.9	a	3 40.56	305 30 " "	III 48.920	7 3 46.80	15 31 10.37	15 1662
64	9.1	10.0	12.2	14.0	15.8	18.2	a	4 43.73	306 10 10.0 6.0	I 46.385	7 4 50.05	14 51 55.77	14 1735
65	9.4	34.8	36.9	38.8	40.7	43.0	a	5 8.53	306 10 " "	I 43.420	7 5 14.85	14 52 52.81	14 1739
66	9.3	15.5	17.7	19.8	22.0	24.2	c	5 19.84	305 2 8.8 5.0	III 45.045	7 5 26.04	16 0 27.82	15 1677
67	8.6	56.5	58.8	0.8	2.6	4.6	e	5 30.97	305 32 11.0 6.8	VII 42.300	7 5 37.22	15 31 19.48	15 1681
68	9.4	8.9	10.9	13.1	15.3	17.4	c	7 13.12	305 48 9.3 5.1	V A 40.840	7 7 19.40	15 12 32.57	15 1690
69	9.4	2.7	4.7	6.9	9.1	11.3	c	8 6.94	305 48 " "	V C 47.890	7 8 13.21	−15 19 58.83	−15 1695

Reduction Elements. Zone 162.

1895.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
December 22.4....	−0.256	−0.045	−0.114	−0.230	+0.014	−0.114
22.5....	−0.203	+0.073				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ε Leporis		β Eridani		λ Eridani		τ Orionis		γ Leporis		ζ Leporis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	298 32 8.15		315 48 8.10		312 8 7.95		314 4 7.85		298 34 7.60		306 10 7.60	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.....	44.260	5 23.21		5 58.60		6 8.29	45.735	5 52.29	43.400	5 7.60	46.080	5 58.52
II	Red. to Mer......	.255	0.22	46.095	0.04		0.09	.810	0.07	.455	0.22	.115	0.15
VI	Inclination	.425		.220	−0.67	46.665	−1.68	.915		.605		.260	
VII	Refraction	.415	1 48.2	.240	57.4	.715	1 5.2.	.965	1 1.0	.640	1 48.2	.270	1 20.7

		29 Canis Majoris		Piazzi VII. 116	
		° ′ ″		° ′ ″	
	CIRCLE READING.	296 40 7.90		309 42 8.30	
		r	′ ″	r	′ ″
I	Microm. Eq. ..		6 7.75		4 43.83
II	Red. to Mer......	46.560	0.21		0.11
VI	Inclination	.735	−0.67	42.260	−1.68
VII	Refraction	.690	1 57.0	.310	1 11.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Ursae Minoris S. P. .	4 56 29.89	8	+0.92	[−2.59]	58 50	. . . .
ε Leporis	5 1 8.16	11	−0.35	−2.57	298 35 43.4	17.0
β Eridani	5 2 48.69	11	−0.30	−2.57	315 53 8.7	17.1
λ Eridani	5 4 14.68	11	−0.31	−2.58	312 13 9.4	17.5
τ Orionis	5 12 37.95	11	−0.30	−2.62	314 8 59.2	16.7
γ Leporis	5 40 12.37	11	−0.35	−2.61	298 37 27.2	17.0
ζ Leporis	5 42 19.21	9	−0.32	−2.62	306 14 45.6	17.3
29 Canis Majoris	7 14 25.14	11	−0.36	−2.61	296 44 18.2	17.5
Piazzi VII. 116.	7 23 2.96	11	−0.32	−2.75	309 45 39.5	17.1

h 5.288 . . . . *dt* . . . . s −2.595

Hourly rate . . . . −0.0420

Adopted Equator Point . . . . 321° 6′ 17.15″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 0	29.944	43.4	41.3
6 0	29.940	42.6	40.3
7 0	29.926	42.9	40.8
7 25	29.930	42.8	41.0

Notes.

6. Images unsteady.
15, Piazzi VII. 116. Clouds after each of these.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0				$D=$ Z. D. N. to 1895.0				*R*			
			304°	305°	306°	307°	304°	305°	306°	307°	304° 30′	305°	306°	307°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
304	−0.332	5 0	. . . . .	+9.105	+9.209	+9.311	. . . .	−11.71	−11.80	−11.90	86.04	84.45	81.41	78.51
305	0.328	5 30	. . . . .	9.046	9.151	9.255	. . . .	9.78	9.83	9.88	86.14	84.55	81.51	78.60
306	0.325	6 0	. . . . .	9.038	9.142	9.246	. . . .	7.68	7.69	7.70	86.22	84.63	81.58	78.67
307	−0.322	6 30	+8.974	9.080	9.183	9.283	−5.49	5.46	5.41	5.38	86.16	84.57	81.53	78.61
		7 0	+9.069	9.170	9.268	9.365	−3.20	3.13	3.04	2.96	86.08	84.49	81.45	78.54
		7 30	. . . . .	+9.308	+9.401	+9.492	. . . .	− 0.75	− 0.63	− 0.49	86.06	84.47	81.43	78.52

1895 DECEMBER 25. ZONE 163. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	8.9	51.7	54.0	56.0	58.2	0.4	c	44 56.06	305 18	10.0	7.1	III B	42.810	4 45 2.14	−15 47 30.31	−15 871
2	8.7	1.4	3.6	5.8	8.0	10.1	c	46 5.78	305 18	“	“	III	43.075	4 46 11.86	15 44 12.33	15 874
3	8.0	39.0	41.1	43.3	45.3	47.5	c	50 43.24	304 26	10.0	6.0	III	47.800	4 50 49.22	16 34 46.40	16 992
4	7.8	30.4	32.4	34.3	36.1	38.4	a	53 3.95	306 38	10.0	6.5	I	46.160	4 53 10.14	14 23 10.69	14 1003
5	9.2	57.1	59.2	1.1	3.0	5.3	a	53 30.77	306 38	“	“	I	45.480	4 53 36.96	14 23 23.87	14 1004
6	9.1	7.8	10.0	11.8	13.7	15.9	a	54 41.68	305 8	10.0	6.3	I	43.180	4 54 47.72	15 54 12.74	15 914
7	9.0	50.8	52.7	54.7	56.4	58.8	a	55 24.53	305 8	“	“	I B	44.840	4 55 30.56	15 56 54.20	16 1018
8	9.4	28.0	30.3	32.4	34.7	36.8	c	55 32.44	304 6	10.0	6.0	III A	43.425	4 55 38.37	16 52 57.70	16 1019
9	9.3	49.9	52.2	54.3	56.6	58.5	c	55 54.30	304 6	“	“	V C	49.400	4 56 0.22	17 0 45.94	17 1006
10	9.2	21.2	23.4	25.4	27.3	29.1	e	55 55.54	305 8	10.0	7.0	VII	45.050	4 56 1.57	−15 53 39.93	−15 921
11	9.4	59.7	1.6	3.8	6.1	8.3	c	58 3.90	307 10	10.0	6.0	III A	44.915	4 58 10.13	−13 48 21.32	−13 1052
12	9.1	51.4	53.4	55.3	57.2	59.6	a	59 24.95	307 10	“	“	I C	44.290	4 59 31.17	13 58 13.96	14 1030
13	8.5	35.6	37.7	40.0	42.1	44.3	c	59 39.94	307 10	“	“	III	47.580	4 59 46.17	13 50 46.10	13 1058
14	9.1	5.2	7.2	9.5	11.7	13.8	c	0 9.48	306 46	10.0	6.6	V	47.520	5 0 15.67	14 14 49.51	14 1033
15	8.1	42.0	44.3	46.2	48.1	50.0	e	0 16.59	306 46	“	“	VII C	46.775	5 0 22.76	14 21 30.86	14 1035
16	9.4	59.9	2.0	4.0	6.1	8.4	c	2 4.08	306 24	10.0	6.5	III A	44.030	5 2 10.23	14 34 41.50	14 1046
17	8.9	41.8	44.0	46.1	48.4	50.4	c	2 46.14	306 24	“	“	III B	43.900	5 2 52.28	14 41 12.74	14 1050
18	9.2	9.1	11.3	13.4	15.6	17.8	c	8 13.44	306 18	10.0	5.5	III A	42.290	5 8 19.56	14 41 17.87	14 1070
19	9.1	48.6	50.8	52.9	55.0	57.1	c	8 52.88	306 18	“	“	III	41.440	5 8 58.98	14 44 49.80	14 1073
20	7.0	16.3	18.5	20.8	23.0	25.0	c	9 20.72	306 18	“	“	III	45.900	5 9 26.82	−14 43 24.40	−14 1074
21	9.3	30.3	32.5	34.6	36.9	39.0	c	12 34.66	303 32	10.0	5.7	III B	43.330	5 12 40.46	−17 33 36.25	−17 1072
22	9.0	30.6	32.7	34.8	37.0	39.2	c	13 34.86	303 32	“	“	III	49.395	5 13 40.66	17 28 26.92	17 1078
23	7.0	45.3	47.3	49.4	51.7	53.8	c	18 49.50	307 0	10.0	7.0	III	46.370	5 18 55.66	14 1 16.09	14 1119
24	8.5	3.1	5.3	7.5	9.7	11.8	c	28 7.48	304 38	10.0	7.2	V	46.180	5 28 13.37	16 23 31.07	16 1168
25	9.2	9.6	11.8	13.9	16.0	18.4	c	34 13.94	303 52	10.0	6.4	III A	42.110	5 34 19.75	17 7 37.44	17 1197
26	9.1	40.0	42.4	44.6	47.0	48.9	c	35 44.58	303 52	“	“	III	46.640	5 35 50.38	17 9 26.43	17 1206
27	7.5	45.8	48.0	52.5	54.0	56.7	c_4 d_3	37 43.72	303 26	10.0	6.5	VI	49.050	5 37 49.46	17 34 44.19	17 1214
28	9.1	7.2	9.2	11.5	13.7	16.0	c	41 11.52	305 4	10.0	7.0	V	41.490	5 41 17.41	15 59 4.61	16 1232
29	9.0	36.9	38.9	41.0	43.4	45.4	c	41 41.12	305 4	“	“	V B	50.240	5 41 47.04	15 59 30.34	16 1235
30	9.0	50.4	52.6	54.7	56.9	59.0	c	46 54.72	307 12	10.0	6.5	V	45.380	5 47 0.86	−13 49 46.23	−13 1281
31	9.4	26.0	28.2	30.1	32.0	. . . . . .	e	47 0.56	307 12	“	“	VII C	47.810	5 47 6.69	−13 55 26.63	−13 1282
32	9.3	9.8	11.9	14.3	16.4	18.6	c	48 14.20	304 22	10.0	6.4	V	42.450	5 48 20.04	16 40 51.18	16 1288
33	9.5	56.6	58.7	0.7	2.7	4.6	e	48 30.79	304 22	“	“	VII B	41.990	5 48 36.63	16 44 14.95	16 1289
34	9.0	59.9	2.1	4.3	6.5	8.6	c	55 4.28	306 20	10.0	7.0	III	42.050	5 55 10.33	−14 42 53.88	−14 1300

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
35	8.8	11.6	13.8	15.9	18.0	20.2	c	59 15.90	307 6 10.0 6.5	III	41.880	5 59 22.03	−13 56 56.76	−13 1339
36	8.2	27.2	29.4	31.5	33.6	35.8	c	4 31.50	305 22 10.0 6.6	III	41.760	6 4 37.45	15 41 5.87	15 1280
37	8.5	42.8	45.0	47.2	49.3	51.5	c	6 47.16	304 28 10.0 6.5	III	45.160	6 6 53.02	16 34 4.22	16 1386
38	9.2	48.4	50.4	52.2	54.1	56.3	a	13 21.88	306 50 10.0 6.8	I A	39.050	6 13 27.99	14 10 39.67	14 1393
39	8.9	0.0	1.9	3.8	5.8	......	a	13 33.51	306 50 " "	V B	37.495	6 13 39.61	14 17 41.48	14 1395
40	8.7	52.3	54.4	56.5	58.7	0.8	c	13 56.54	306 50 " "	V C	42.620	6 14 2.64	−14 19 15.77	−14 1397
41	8.9	44.5	46.7	48.7	50.9	53.0	c	14 48.76	306 50 " "	III C	47.760	6 14 54.86	[−14 17 36.29]	−14 1402
42	7.0	13.0	15.0	17.2	19.3	21.4	c	15 17.18	307 6 10.0 4.0	V	42.230	6 15 23.32	13 56 58.39	13 1450
43	7.8	47.9	50.2	52.2	54.2	56.0	e	16 22.20	304 6 10.0 6.1	VII	45.550	6 16 28.03	16 56 4.03	16 1443
44	9.0	27.7	32.0	34.2	38.4	40.0	c_2 d_2	17 29.88	306 30 10.0 5.1	I	44.175	6 17 35.96	14 32 20.14	14 1418
45	8.2	39.5	41.7	43.9	46.1	48.0	c	18 43.84	306 56 10.0 6.3	V	44.480	6 18 49.96	14 6 15.75	14 1424
46	8.5	50.9	53.1	55.2	57.6	59.7	c	20 55.30	306 56 " "	III A	40.660	6 21 1.43	14 4 13.13	14 1440
47	9.0	42.9	45.1	47.3	49.4	51.6	c	21 47.26	306 56 " "	III	44.710	6 21 53.39	14 6 11.07	14 1446
48	8.0	31.5	33.7	35.8	38.0	40.1	c	26 35.82	304 28 10.0 6.3	III B	44.290	6 26 41.70	16 37 41.44	16 1509
49	8.3	2.1	4.3	6.0	8.0	10.2	a	26 36.06	304 28 " "	I	44.670	6 26 41.94	16 34 19.32	16 1508
50	7.5	10.8	13.0	14.7	16.5	18.9	a	29 44.62	305 6 10.0 6.3	I	45.415	6 29 50.57	−15 56 4.18	−15 1432
51	8.6	52.8	54.8	57.0	59.2	1.3	c	29 57.02	305 6 " "	III	41.385	6 30 2.97	−15 57 23.17	−15 1433
52	8.8	10.6	12.8	15.0	17.3	19.3	c	30 15.00	305 6 " "	III	40.970	6 30 20.95	15 57 31.23	15 1437
53	8.0	53.5	55.6	57.8	0.1	2.2	c	30 57.84	305 6 " "	III	46.975	6 31 3.80	15 55 36.24	15 1446
54	6.8	11.2	13.5	15.6	17.9	20.0	c	31 15.64	305 6 " "	V C	49.410	6 31 21.59	16 1 16.98	15 1448
55	6.5	6.4	8.5	10.6	12.8	15.0	c	34 10.66	304 52 10.0 6.0	III	44.760	6 34 16.60	16 10 20.73	16 1556
56	8.0	58.0	0.1	2.3	4.6	6.6	c	37 2.32	303 34 10.0 6.0	III A	41.250	6 37 8.12	17 26 17.87	17 1584
57	9.3	31.0	33.3	35.4	37.6	39.7	c	38 35.40	303 34 " "	III C	47.550	6 38 41.18	17 33 59.12	17 1595
58	8.5	13.2	15.4	17.6	19.8	21.9	c	40 17.58	303 42 10.0 5.6	III	46.720	6 40 23.40	17 19 49.18	17 1605
59	9.3	48.0	50.2	52.4	54.5	56.7	c	45 52.36	305 12 10.0 6.5	III	44.300	6 45 58.35	15 50 32.41	15 1534
60	9.0	30.0	31.9	34.0	36.3	38.5	c	51 34.14	306 6 10.0 6.6	III	42.400	6 51 40.23	−14 57 8.12	−14 1648
61	8.9	27.1	29.1	31.4	33.6	35.7	c	52 31.38	306 32 10.0 6.9	III	44.760	6 52 37.52	−14 30 21.73	−14 1658
62	8.9	6.3	8.5	10.7	12.9	15.0	c	55 10.68	304 58 10.0 6.5	III	46.975	6 55 16.67	16 3 45.03	16 1694
63	9.0	1.0	3.2	5.4	7.6	9.8	c	57 5.40	303 2 10.0 6.3	III	48.610	6 57 11.20	17 59 20.66	17 1731
64	9.0	50.0	51.9	53.9	55.6	58.0	a	58 23.45	307 0 10.0 6.4	I	47.850	6 58 29.66	14 1 21.85	13 1795
65	9.1	43.2	45.0	47.0	49.0	51.3	a	59 17.16	303 46 10.0 6.1	I B	45.020	6 59 23.04	17 19 39.56	17 1752
66	9.1	29.7	31.8	34.0	36.4	38.6	c	59 34.10	303 46 " "	III	42.460	6 59 39.98	17 17 17.23	17 1756
67	8.5	54.6	56.7	58.8	1.1	3.1	c	59 58.86	303 46 " "	V	48.090	7 0 4.75	17 15 30.64	17 1760
68	......	41.0	43.0	45.0	46.9	48.9	e	0 15.48	307 6 10.0 7.0	VII C	48.510	7 0 21.69	14 1 39.09	13 1807
69	9.3	50.3	51.6	54.5	56.8	59.0	c	3 54.64	305 4 10.0 7.0	III	49.940	7 4 0.68	15 56 50.53	15 1663
70	9.2	29.9	31.9	34.2	36.3	38.5	c	4 34.16	305 4 " "	III B	51.080	7 4 40.19	−15 59 42.17	−15 1666
71	8.6	51.7	53.9	55.9	58.1	0.2	c	5 55.96	305 4 " "	III	45.100	7 6 2.00	−15 58 24.11	−15 1684
72	8.8	24.8	26.8	29.1	31.3	33.4	c	6 29.08	305 4 " "	III	44.760	7 6 35.12	15 58 30.82	15 1686
73	9.0	46.6	48.9	51.0	53.0	55.5	c	6 51.00	305 4 " "	III	46.750	7 6 57.05	15 57 52.57	15 1689
74	9.1	5.2	7.4	9.6	11.7	13.8	c	8 9.54	305 4 " "	III B	42.340	7 8 15.58	16 2 31.13	15 1698
75	8.7	41.0	43.2	45.3	47.2	49.0	e	8 15.38	305 4 " "	V	43.810	7 8 21.43	15 58 50.99	15 1699
76	9.2	37.7	39.5	41.9	44.0	46.2	c	9 41.86	305 4 " "	III A	46.190	7 9 47.92	15 54 49.09	15 1713
77	6.8	57.0	59.1	1.4	2.6	5.5	c	14 1.32	304(34)10.0 6.7	III	47.190	7 14 7.35	16 27 48.45	16 1886
78	8.1	37.1	39.2	41.5	43.7	45.9	c	14 41.48	303 22 10.0 6.5	III	49.420	7 14 47.38	17 39 9.92	17 1916
79	8.0	41.6	43.7	45.9	48.1	50.2	c	15 45.90	303 22 " "	III	44.270	7 15 51.80	17 40 49.12	17 1923
80	9.1	30.9	33.0	34.9	37.2	39.5	c	23 35.10	306 54 10.0 6.0	III B	49.840	7 23 41.39	−14 10 7.32	−14 1915
81	8.0	41.7	43.8	45.9	48.3	50.4	c	24 46.02	304 16 10.0 6.5	III	46.390	7 24 52.07	−16 46 8.42	-16 1973
82	9.0	31.3	33.5	35.7	37.9	40.0	c	25 35.68	304 16 " "	III C	49.410	7 25 41.72	16 51 36.97	16 1978
83	8.0	37.1	39.3	41.3	43.2	45.0	e	30 11.71	307 6 10.0 6.0	V	44.580	7 30 18.05	13 56 37.89	13 2104
84	8.5	16.4	18.6	20.3	22.4	24.5	a	31 50.01	307 6 " "	III C	50.410	7 31 56.35	14 1 11.37	13 2119
85	8.7	9.0	11.0	12.9	14.9	17.0	a	34 42.68	306 0 10.0 6.0	I	41.740	7 34 48.94	15 3 34.21	14 2073
86	5.5	8.9	11.0	12.8	14.7	16.9	a	35 42.57	306 0 " "	I	46.940	7 35 48.83	15 1 54.72	14 2082
87	9.1	27.0	29.0	30.8	32.7	35.0	a	36 0.62	306 0 " "	I	43.880	7 36 6.88	15 2 53.53	14 2086
88	9.3	16.8	18.3	22.3	24.4	26.7	b_2 c_3	36 26.70	306 26 10.0 5.9	III	42.050	7 36 33.01	14 37 29.07	14 2102
89	9.4	6.6	8.8	10.7	12.8	14.8	e	36 41.18	306 26 " "	V A	39.195	7 36 47.49	14 35 10.06	14 2112
90	9.0	2.8	4.8	7.0	9.3	11.3	c	38 7.04	306 26 " "	V	42.165	7 38 13.35	−14 37 28.73	−14 2166
91	8.8	31.6	33.7	35.8	37.9	40.0	c	38 35.80	306 26 " "	V	47.680	7 38 42.12	−14 35 43.05	−14 2178
92	9.0	5.4	7.5	9.2	11.0	13.3	a	40 38.87	306 56 10.0 6.4	I	47.360	7 40 45.24	14 5 45.28	13 2207
93	8.6	48.2	50.5	52.6	54.7	56.8	c	40 52.56	305 50 10.0 6.2	III	46.820	7 40 58.84	15 12 0.58	15 2023
94	9.5	38.6	40.6	42.6	44.7	46.9	c	41 42.68	305 50 " "	V C	49.960	7 41 48.95	15 17 27.95	15 2035
95	8.7	33.0	35.1	37.3	39.5	41.6	c	0 37.30	306 40 10.0 6.4	III	42.720	8 0 43.76	14 23 22.70	14 2362
96	8.9	12.5	14.7	16.9	19.1	21.2	c	1 16.88	303 6 10.0 5.5	III B	40.510	8 1 23.02	18 1 30.52	17 2326
97	9.3	44.9	47.1	49.1	51.0	52.9	e	1 18.93	303 6 " "	VII	42.270	8 1 25.08	17 57 45.90	17 2327
98	9.0	4.7	6.9	9.0	11.1	13.4	c	6 9.02	304 44 10.0 6.0	III	51.000	8 6 15.35	16 16 51.59	16 2331
99	9.0	8.1	10.4	12.3	14.2	16.1	e	6 42.35	304 18 10.0 5.7	VII	44.890	8 6 48.64	−16 44 53.07	−16 2337

Reduction Elements. Zone 163.

	OBSERVED.			ADOPTED.		
1895.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
December 25.4....	−0.242	+0.038	−-0.039	−0.245	+0.044	−0.039
25.6....	−0.248	+0.051				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	o^1 Eridani		Lalande 8205		53 Eridani		54 Eridani		κ Orionis		η Leporis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	313 56 8.10		300 10 7.45		306 32 8.15		301 10 7.65		311 20 8.55		306 52 8.30	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	42.225	4 44.52	41.845	4 37.58	43.360	5 6.42	44.800	5 34.54		5 0.56	41.040	4 21.65
II Red. to Mer.	.255	0.07	.900	0.21	.390	0.14	.865	0.20		0.10	.055	0.14
VI Inclination	.380		42.035		.555		45.010		43.160	—1.68	.190	
VII Refraction	.430	1 0.2	.060	1 39.5	.550	1 18.1	.045	1 35.5	.155	1 5.6	.230	1 16.9

	Piazzi VII. 85		*e* Navis		Lalande 16304	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	312 16 8.65		298 26 7.75		308 46 8.30	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	41.070	4 22.75	45.990	5 56.94	42.040	4 39.69
II Red. to Mer.	.115	0.09	46.050	0.22	.100	0.12
VI Inclination	.275		.180			1.68
VII Refraction	.285	1 3.5	.170	1 46.1		1 11.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Groombridge 750	4 4 14.31	8	—2.27	[—2.84]	46 20	....
o^1 Eridani	4 6 51.92	11	—0.24	—2.85	313 59 52.5	18.4
Lalande 8205	4 16 11.55	11	—0.27	—2.85	300 13 5.7	17.5
53 Eridani	4 33 29.75	11	—0.26	—2.85	306 35 56.6	18.2
54 Eridani	4 35 58.30	11	—0.27	—2.85	301 14 6.9	18.5
κ Orionis	5 42 54.23	11	—0.25	—2.86	311 24 1.9	19.1
η Leporis	5 51 44.89	11	—0.26	—2.86	306 55 13.2	19.0
Piazzi VII. 85	7 17 7.56	11	—0.25	—2.85	312 19 28.0	19.1
e Navis	7 52 27.88	11	—0.28	—2.84	298 30 18.8	19.7
Lalande 16304	8 13 32.45	11	—0.25	—2.93	308 49 38.1	19.2

h 4.852 .... *dt* .... s —2.853
Hourly rate .... —0.0068

Adopted Equator Point .... 321° 6′ 18.″74

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 58	29.792	48.4	47.5
5 3	29.768	49.4	48.6
6 0	29.756	50.7	49.3
7 2	29.744	51.2	49.3
8 17	29.748	50.7	49.7

Note.
83. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.	
°	s
303	—0.267
304	0.264
305	0.262
306	0.260
307	0.258
308	—0.256

APPARENT RIGHT ASCENSION.	*A*=α to 1900.0					
	303°	304°	305°	306°	307°	308°
h m	s	s	s	s	s	s
4 30	+9.021	+9.123	+9.226	+9.327	+9.424	+9.523
5 0	8.899	9.006	9.112	9.213	9.315	9.415
5 30	8.829	8.936	9.042	9.146	9.251	9.352
6 0	8.811	8.919	9.026	9.129	9.233	9.335
6 30	8.847	8.952	9.057	9.160	9.260	9.360
7 0	8.937	9.038	9.138	9.236	9.334	9.430
7 30	9.076	9.172	9.267	9.360	9.452	9.543
8 0	9.266	9.355	9.440	9.526	9.611	9.694
8 30	+9.501	+9.581	+9.658	+9.735	+9.812	+9.887

APPARENT RIGHT ASCENSION.	*D*=Z. D. N. to 1895.0						*R*					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
4 30	—12.50	—12.65	—12.80	—12.94	—13.09	—13.24	89.29	86.00	82.85	79.87	77.02	75.65
5 0	10.82	10.93	11.04	11.15	11.25	11.36	89.19	85.90	82.76	79.78	76.93	75.56
5 30	8.94	9.01	9.07	9.14	9.20	9.27	89.08	85.80	82.66	79.69	76.84	75.48
6 0	6.91	6.93	6.95	6.97	6.99	7.01	88.98	85.70	82.57	79.60	76.75	75.39
6 30	4.75	4.72	4.70	4.67	4.65	4.62	88.96	85.68	82.55	79.58	76.74	75.37
7 0	2.50	2.43	— 2.36	— 2.29	— 2.22	— 2.15	88.92	85.64	82.51	79.54	76.70	75.34
7 30	— 0.18	— 0.07	+ 0.04	+ 0.15	+ 0.26	+ 0.37	88.90	85.62	82.49	79.52	76.68	75.32
8 0	+ 2.13	+ 2.28	2.43	2.59	2.74	2.89	88.88	85.61	82.47	79.51	76.66	75.30
8 30	+ 4.43	+ 4.63	+ 4.81	+ 5.00	+ 5.20	+ 5.39	88.88	85.61	82.47	79.51	76.66	75.30

1896 JANUARY 1. ZONE 164. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	9.0	27.5	29.4	31.3	33.1	35.5	a	26 1.24	304	52	10.0	5.6	I	44.240	5 26 6.22	−16 10 8.36	−16 1157
2	9.1	8.6	10.6	12.3	14.3	16.5	a	26 42.18	305	56	10.0	5.3	I	46.125	5 26 47.28	15 5 29.33	15 1067
3	9.0	37.8	39.9	41.8	43.5	46.0	a	27 11.44	306	34	10.0	5.2	I	45.055	5 27 16.60	14 27 48.25	14 1160
4	9.0	10.9	13.0	15.2	17.5	19.5	c	27 15.22	304	50	10.0	5.6	V	44.315	5 27 20.20	16 12 10.35	16 1163
5	9.1	44.0	46.2	48.4	50.6	52.8	c	27 48.40	305	58	10.0	5.5	V	48.905	5 27 53.50	15 2 39.05	15 1075
6	7.5	43.2	45.2	47.1	49.0	51.3	a	37 16.96	305	26	10.0	5.4	I B	40.480	5 37 21.97	15 40 36.06	15 1126
7	9.2	19.2	21.3	23.4	25.7	27.8	c	37 23.48	305	26	“	“	III	43.425	5 37 28.50	15 36 28.02	15 1127
8	9.0	47.0	49.2	51.2	53.2	55.0	e	37 21.16	303	46	10.0	5.7	VII	45.565	5 37 26.00	17 15 54.58	17 1213
9	9.2	20.4	22.5	27.0	28.6	31.4	c_4 d_3	38 18.30	303	22	10.0	5.0	VI	48.625	5 38 23.08	17 38 57.33	17 1218
10	9.1	27.5	29.7	31.8	34.0	36.1	c	40 31.82	305	4	10.0	6.0	III B	44.420	5 40 36.78	−16 1 24.21	−16 1227
11	9.2	49.7	51.9	54.0	56.1	58.4	c	40 54.02	305	4	“	“	III	43.195	5 40 58.99	−15 58 34.56	−16 1229
12	8.8	29.6	31.8	34.0	36.1	38.4	c	16 33.98	303	8	10.0	5.7	III	43.790	6 16 38.71	17 54 42.62	17 1458
13	9.3	31.4	33.6	35.6	37.8	40.0	c	31 35.68	305	54	10.0	5.9	III	48.020	6 31 40.73	15 7 17.60	15 1449
14	9.2	59.9	2.1	4.1	6.4	8.5	c	51 4.20	306	22	10.0	6.0	III	42.965	6 51 9.32	14 40 59.93	14 1643
15	8.6	27.3	29.6	31.7	33.9	35.9	c	51 31.68	305	44	10.0	5.6	V	45.180	6 51 36.74	15 18 21.07	15 1567
16	9.1	29.7	31.8	34.0	36.2	38.3	c	0 34.00	307	8	10.0	5.9	III	46.310	7 0 39.21	13 53 56.71	13 1809
17	9.1	15.0	17.0	18.8	20.8	23.1	a	8 48.70	305	42	10.0	6.0	I	47.740	7 8 53.80	15 19 34.86	15 1704
18	9.2	53.1	55.3	57.5	59.6	1.9	c	8 57.48	305	42	“	“	III	47.225	7 9 2.58	15 19 46.31	15 1707
19	8.8	41.7	44.1	46.2	48.3	50.5	c	9 46.16	305	42	“	“	III	43.945	7 9 51.26	15 20 49.53	15 1714
20	9.1	21.1	23.4	25.5	27.6	29.8	c	13 25.48	305	48	10.0	6.1	III	46.210	7 13 30.60	−15 14 6.91	−15 1746
21	9.1	33.5	35.8	37.9	39.8	41.6	e	14 8.07	305	48	“	“	VII B	46.955	7 14 13.19	−15 17 9.05	−15 1753
22	9.2	4.9	7.3	9.4	11.6	13.7	c	15 9.38	305	48	“	“	V C	49.165	7 15 14.50	15 19 38.15	15 1768
23	9.3	20.0	22.1	23.9	25.8	28.2	a	18 53.78	305	32	10.0	5.2	I	42.390	7 18 58.89	15 31 21.71	15 1798
24	9.0	50.9	53.1	55.0	56.8	59.0	a	19 24.81	305	8	10.0	6.1	I B	40.660	7 19 29.88	15 59 9.11	15 1802
25	9.0	13.6	15.6	17.4	19.3	21.6	a	19 47.33	305	8	“	“	III A	42.580	7 19 52.41	15 52 5.40	15 1805
26	6.0	53.9	55.4	59.6	1.9	4.0	b_2 c_3	20 4.00	305	8	“	“	III C	47.215	7 20 9.07	16 0 18.17	15 1810
27	9.3	57.6	59.7	1.5	3.4	5.6	a	21 31.26	306	16	10 0	7.0	I C	43.910	7 21 36.44	14 53 16.67	14 1894
28	9.3	8.1	10.2	12.3	14.3	15.9	e	21 42.58	306	16	“	“	VII	45.015	7 21 47.77	14 46 33.17	14 1896
29	9.2	33.0	34.5	38.8	40.9	43.0	b_2 c_3	21 43.04	306	16	“	“	III A	41.070	7 21 48.23	14 44 30.99	14 1897
30	9.0	52.6	54.6	56.6	58.4	0.7	■	23 26.26	306	16	“	“	I B	50.230	7 23 31.46	−14 48 2.74	−14 1913
31	9.2	57.9	59.9	1.8	3.6	5.9	a	24 31.51	306	16	“	“	I B	44.990	7 24 36.71	−14 49 43.64	−14 1923
32	6.8	10.1	12.2	14.0	15.8	18.2	a	24 43.74	306	16	“	“	III	43.210	7 24 48.94	14 47 6.30	14 1925
33	9.0	55.9	57.8	59.6	1.6	3.9	■	25 29.55	305	26	10.0	5.4	III	48.430	7 25 34.68	15 35 29.79	15 1862
34	8.6	30.7	32.3	36.5	38.7	40.7	b_2 c_3	25 40.81	305	26	“	“	III B	49.240	7 25 45.94	15 38 27.59	15 1865
35	8.7	19.3	21.4	23.3	25.2	27.6	■	26 53.23	304	56	10.0	5.5	I	47.640	7 26 58.32	16 5 45.43	16 1991
36	8.9	43.8	45.9	47.7	49.5	51.9	a	28 17.63	304	56	“	“	I	44.060	7 28 22.72	16 6 54.61	16 2010
37	9.4	12.8	14.1	......	20.4	22.7	b_2 c_3	28 22.68	306	10	10.0	6.0	III A	41.860	7 28 27.89	14 50 18.80	14 1962
38	9.2	30.7	32.9	37.2	38.7	41.4	c_4 d_3	28 28.60	306	10	“	“	VI B	38.820	7 28 33.80	14 57 48.13	14 1964
39	9.2	42.0	43.5	47.8	49.9	52.2	b_2 c_3	29 52.09	306	10	“	“	III	46.160	7 29 57.30	14 52 12.14	14 1977
40	7.5	31.8	34.6	36.2	40.3	42.5	b_1 c_2	30 44.66	305	54	10.0	6.5	II	41.280	7 30 49.85	−15 9 45.93	−15 1914
41	......	20.0	22.0	24.0	25.8	28.1	a	31 53.58	306	50	10.0	6.0	I	45.310	7 31 58.86	−14 12 25.52	−14 2019
42	8.9	45.2	46.6	50.8	53.0	55.1	b_2 c_3	31 55.13	306	50	“	“	V (B)	49.690	7 32 0.41	14 14 17.81	14 2022
43	9.0	44.5	46.1	50.4	52.5	54.8	b_2 c_3	32 54.68	305	40	10.0	6.5	III C	50.230	7 32 59.85	15 27 22.55	15 1941
44	9.5	22.0	24.3	26.2	28.2	30.1	e	32 56.50	305	40	“	“	V	46.120	7 33 1.68	15 22 16.55	15 1942
45	9.4	3.3	5.5	7.2	9.2	11.3	a	35 37.10	305	30	10.0	5.0	III C	46.370	7 35 42.27	15 38 38.75	15 1969
46	9.3	52.5	54.4	56.3	58.1	0.5	a	36 26.16	305	30	“	“	III C	47.610	7 36 31.33	15 38 15.23	15 1974
47	9.3	14.3	16.4	18.1	20.1	22.4	a	37 48.05	305	30	“	“	I	42.300	7 37 53.24	15 33 29.82	15 1990
48	9.2	45.0	47.1	49.3	51.5	53.6	c	37 49.30	305	0	10.0	6.0	V	44.540	7 37 54.44	16 2 50.84	15 1991
49	8.0	19.7	22.0	24.1	25.9	27.8	e	37 54.18	305	20	10.0	6.3	VII	43.780	7 37 59.35	15 43 5.37	15 1992
50	8.9	50.0	52.1	54.3	56.6	58.6	c	38 54.32	306	48	10.0	6.5	V	44.960	7 38 59.63	−14 14 37.17	−14 2181
51	8.6	3.8	5.9	8.0	10.2	12.4	c	40 8.06	306	12	10.0	7.0	V	44.800	7 40 13.32	−14 50 42.27	−14 2190
52	9.2	3.7	5.2	9.4	11.6	13.8	b_2 c_3	41 13.75	306	12	“	“	III C	47.950	7 41 19.01	14 56 7.00	14 2198
53	8.8	33.9	36.1	38.2	40.5	42.6	c	41 38.26	306	12	“	“	III	(49).380	7 41 43.53	14 49 13.47	14 2200
54	9.3	40.5	42.6	44.7	46.9	49.0	c	54 44.74	305	10	10.0	6.5	III	41.390	7 54 49.98	15 53 54.43	15 2170
55	9.0	54.7	57.0	58.9	1.2	3.4	c	55 59.04	306	40	10.0	7.1	III	42.810	7 56 4.42	14 23 22.46	14 2320
56	9.3	38.1	40.3	42.5	44.6	46.8	c	58 42.46	305	2	10.0	5.5	III	47.410	7 58 47.72	16 0 1.01	15 2223
57	8.5	14.2	16.3	18.5	20.8	22.9	c	59 18.54	305	2	“	“	III B	46.290	7 59 23.79	16 3 36.00	15 2232
58	8.9	1.6	3.5	5.4	7.2	9.6	a	0 35.22	305	42	10.0	6.5	I	47.080	8 0 40.54	15 20 3.71	15 2243
59	9.4	34.3	36.5	38.3	40.2	42.6	a	1 8.10	305	58	10.0	6.8	I	44.370	8 1 13.45	15 4 54.87	14 2366
60	9.3	51.6	53.7	55.6	57.5	59.9	a	2 25.55	304	44	10.0	6.0	I	47.630	8 2 30.80	−16 17 57.13	−16 2300
61	8.9	18.8	23.3	25.5	29.7	31.7	(b_3 c_5)	2 27.50	306	44	10.0	7.0	V	43.940	8 2 32.92	−14 19 3.87	−14 2375
62	8.9	19.4	21.4	23.5	25.7	27.8	c	6 23.56	306	4	10.0	5.0	III	41.600	8 6 28.95	14 59 51.70	14 2401
63	8.9	20.9	23.1	24.8	26.6	29.0	a	7 54.59	306	4	“	“	I	39.570	8 7 59.98	15 0 29.57	14 2416
64	9.0	50.9	53.0	55.3	57.5	59.6	c	7 55.26	306	4	“	“	III	45.290	8 8 0.66	14 58 41.31	14 2417
65	9.4	26.0	28.2	30.1	32.1	34.0	e	8 0.45	306	4	“	“	V C	43.130	8 8 5.84	−15 5 50.17	−14 2418

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
66	8.6	40.3	42.5	44.6	46.8	48.9	c	16 44.62	306 34 10.0	6.1	III	43.690	8 16 50.11	−14 29 12.41	−14 2485
67	8.9	57.7	59.9	2.0	4.2	6.4	c	20 2.04	306 12 10.0	7.0	III	41.740	8 20 7.51	14 51 51.47	14 2505
68	8.7	59.0	0.9	2.7	4.7	7.0	a	23 32.47	306 52 10.0	6.1	I B	41.470	8 23 38.01	14 15 7.55	14 2532
69	9.1	23.3	25.4	27.2	29.0	31.4	a	24 56.86	306 52 "	"	I	43.510	8 25 2.42	14 11 15.68	14 2542
70	......	55.3	57.4	59.1	1.1	3.2	a	25 29.23	304 0 10.0	6.5	I	42.140	8 25 34.56	[−17 3 51.40]	−16 2479
71	8.4	34.7	36.8	38.9	41.2	43.2	c	25 38.96	305 58 10.0	6.0	V A	43.620	8 25 44.46	[−15 2 4.26]	−14 2548
72	8.9	28.3	29.8	33.9	36.2	38.2	b_2 c_3	26 38.29	305 58 "	"	III C	49.625	8 26 43.78	15 9 49.40	15 2477
73	9.0	33.3	34.9	39.1	41.3	43.3	b_2 c_3	27 43.39	305 58 "	"	III	47.515	8 27 48.90	15 4 3.97	14 2563
74	9.0	4.3	5.9	10.0	12.2	14.4	b_2 c_3	28 14.36	306 42 10.0	5.6	III	48.750	8 28 19.93	14 19 38.28	14 2569
75	9.1	31.7	33.2	37.3	39.6	41.7	b_2 c_3	28 41.70	306 42 "	"	III C	51.130	8 28 47.26	14 25 18.94	14 2571
76	8.5	11.6	13.7	15.6	17.6	19.4	e	28 45.99	306 14 10.0	6.2	VII B	46.215	8 28 51.52	14 51 44.47	14 2572
77	9.0	40.5	42.8	44.9	47.0	51.3	c_2 d_1	29 42.74	306 14 "	"	V (C)	44.290	8 29 48.27	14 55 32.84	14 2576
78	9.0	38.3	40.5	42.6	46.9	48.4	c_3 d_2	30 38.33	306 14 "	"	V B	44.330	8 30 43.87	14 52 19.77	14 2579
79	8.6	26.4	28.6	30.7	33.0	35.1	c	31 30.76	306 14 "	"	V A	41.680	8 31 36.31	14 46 42.14	14 2583
80	9.4	33.5	35.6	37.6	39.2	41.7	a	34 7.32	305 22 10.0	5.7	I	46.240	8 34 12.83	−15 40 30.75	−15 2534
81	9.3	......	46.7	48.5	50.4	52.7	a	34 18.44	305 2 10.0	5.6	III	41.560	8 34 23.92	−16 2 3.31	−15 2535
82	9.0	46.1	47.6	51.9	54.0	56.2	b_2 c_3	34 56.17	305 54 10.0	5.7	III	42.900	8 35 1.72	15 9 34.82	15 2541
83	9.0	6.0	8.2	10.4	14.6	16.2	c_3 d_2	35 6.06	305 54 "	"	V	44.180	8 35 11.61	−15 9 11.66	−14 2604

Reduction Elements. Zone 164.

	OBSERVED.			ADOPTED.		
1896.	c	b	a	c	b	a
	s	s	s	s	s	s
January 1.4....	−0.110	+0.095	+0.075	−0.110	−0.095	+0.075

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ε Leporis		β Eridani		β Orionis		ζ Leporis		Lalande 16304		Lalande 17333	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	298 32 7.00		315 48 7.75		312 42 7.75		306 10 8.00		308 46 8.20		302 40 8.45	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.430	5 27.44		6 2.25	46.330	6 3.60	46.165	6 0.27	42.230	4 44.67	43.815	5 15.06
II Red. to Mer......	.505	0.22		0.05	.390	0.08	.210	0.15	.280	0.12	.850	0.18
VI Inclination	.635		46.350	−1.68	.520		.355		.400		44.010	
VII Refraction.......	.670	1 52.0	.400	59.4	.540	1 6.2	.360	1 23.5	.410	1 16.2	43.980	1 35.3

	15 Hydrae	
	° ′ ″	
CIRCLE READING.	314 14 7.90	
	r	′ ″
I Microm. Eq......	46.250	6 2.04
II Red. to Mer.....	.285	0.07
VI Inclination	.440	
VII Refraction.......	.480	1 2.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Ursae Minoris S. P..	4 56 31.70	11	+0.92	[−4.02]	58 50	....
ε Leporis...........	5 1 9.21	11	0.00	−3.96	298 35 42.7	18.5
β Eridani...........	5 2 49.83	10	+0.01	−3.98	315 53 9.0	18.9
β Orionis...........	5 9 38.12	11	+0.01	−4.08	312 47 5.2	18.6
ζ Leporis...........	5 42 20.39	11	+0.01	−4.07	306 14 44.9	18.8
Lalande 16304.....	8 13 33.49	11	+0.01	−4.07	308 49 36.8	19.8
Lalande 17333.....	8 42 6.68	11	0.00	−4.04	302 43 48.4	20.0
15 Hydrae...........	8 46 33.36	11	+0.01	−4.03	314 19 7.2	19.2

h		s
5.235	.............*dt*.....................	−4.022
	Hourly rate	−0.0075
		° ′ ″
	Adopted Equator Point	321 6 19.11

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 59	29.920	27.6	24.8
5 59	29.920	27.0	24.1
6 59	29.910	27.6	24.0
7 57	29.920	27.4	24.0
9 15	29.952	26.7	24.0

Note.

70. Not seen double.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			303°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	s
303	+0.004	5 0	+8.873	+8.976	+9.081	+9.184	+9.284	.....
304	0.005	5 30	8.783	8.888	8.994	9.099	9.200	.....
305	0.006	6 0	+8.744	8.851	8.956	9.059	9.162	.....
306	0.007	6 30	.....	8.863	8.967	9.068	9.168	+9.267
307	0.008	7 0	.....	8.926	9.027	9.123	9.220	9.314
308	+0.008	7 30	.....	9.038	9.133	9.226	9.316	+9.406
		8 0	.....	9.201	9.286	9.372	9.456	.....
		8 30	.....	9.406	9.484	9.560	9.636	.....
		9 0	.....	+9.652	+9.720	+9.788	+9.854	.....

APPARENT RIGHT ASCENSION.	D = Z. D. N. to 1895.0						R					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	307° 30′
h m	″	″	″	″	″	″	″	″	″	″	″	″
5 0	−9.31	−9.46	−9.59	−9.73	−9.87	....	94.19	90.72	87.40	84.26	81.25	79.80
5 30	7.32	7.41	7.52	7.61	7.70	...	94.25	90.78	87.46	84.31	81.30	79.86
6 0	−5.18	5.23	5.28	5.34	5.39	....	94.32	90.84	87.52	84.37	81.36	79.91
6 30	....	2.92	2.93	2.94	2.96	−2.96	94.30	90.82	87.50	84.35	81.34	79.89
7 0	....	−0.54	−0.51	−0.47	−0.43	−0.40	94.30	90.82	87.50	84.35	81.34	79.89
7 30	....	+1.88	+1.96	+2.03	+2.11	+2.19	94.32	90.84	87.52	84.37	81.36	79.91
8 0	....	4.28	4.40	4.52	4.64	....	94.34	90.87	87.54	84.39	81.38	79.93
8 30	....	6.65	6.81	6.98	7.13	....	94.38	90.91	87.58	84.43	81.41	79.96
9 0	....	+8.93	+9.13	+9.33	+9.53	....	94.43	90.95	87.62	84.47	81.45	80.00

1896 JANUARY 4. ZONE 165. CLAMP WEST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°	
1	9.2	23.1	25.2	27.3	29.6	31.8	c	46 27.40	305 34 10.0	6.3	III	48.270	0 46 33.74	−15 25 37.12	−15	156
2	.....	51.5	53 5	55.8	58.2	0.3	c	3 55.86	302 46 10.0	6.7	III	44.535	2 4 1.11	18 15 9.91	18	374
3	9.2	24.4	26.6	28.7	31.0	33.1	c	41 28.76	305 34 9.4	5.5	V B	51.040	3 41 33.22	15 28 38.03	15	652
4	7.0	59.4	1.8	3.8	6.0	8.2	c	2 3.84	302 42 10.0	4.8	III	46.210	4 2 7.88	−18 19 11.91	−18	752

Reduction Elements. Zone 165.

	OBSERVED.			ADOPTED.		
1896.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
January 4.4....	−0.201	+0.252	+0.106	−0.201	+0.252	−0.106

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

CIRCLE READING.	2 Ceti		ι Ceti		22 Ceti		67 Ceti		δ Eridani		64 Eridani	
	° ′ ″ 303 6 0.40		° ′ ″ 311 38 8.35		° ′ ″ 309 12 8.65		° ′ ″ 314 8 8.55		° ′ ″ 310 54 7.75		° ′ ″ 308 20 8.10	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	49.125	6 56.12	43.975	5 18.54	44.940	5 37.15	43.630	5 11.25	47.785	6 30.96	46.370	6 4.35
II Red. to Mer......	.120	0.18	44.060	0.09	.995	0.12	.640	0.07	.790	0.10	.450	0.13
VI Inclination......	.230		.160		45.130		.790		.965		.570	
VII Refraction.......	.260	1 36.4	.190	1 10.9	.200	1 17.4	.800	1 5.3	.950	1 13.2	.545	1 20.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Ceti	23 58 30.15	11	+0.03	−5.14	303 11 20.3	19.1
Ceti	0 14 13.13	11	+0.05	−5.12	311 42 16.1	19.5
2 Ceti	0 50 54.08	11	+0.04	−4.97	309 16 28.5	16.9
Ursae Minoris	1 20 53.56	8	−5.52	[−5.12]	49 48	....
7 Ceti	2 11 53.82	11	+0.05	−5.17	314 12 14.6	17.1
Eridani	3 38 22.41	11	+0.04	−5.12	310 59 25.6	17.8
4 Eridani	4 55	..	....	....	308 24 52.3	15.1

h		s
0.357	*dt*	−5.077
	Hourly rate	−0.0265
		° ′ ″
	Adopted Equator Point	321 6 17.58

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
0 4	30.080	14.2	12.6
0 58	30.088	13.1	11.8
2 16	30.102	11.9	10.7
3 18	30.092	10.9	9.7
4 35	30.074	9.9	8.7
4 59	30.074	9.9	8.7

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	+0.03	+11.40	+81.16	88.14
2	0.03	10.34	69.90	98.24
3	0.03	9.60	43.17	88.80
4	+0.03	+ 9.18	+37.23	98.74

a = Instrumental corrections.
$A = \alpha$ to 1900.0.
D = Z. D. N. to 1900.0.

1896 JUNE 29. ZONE 166. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	7.0	19.3	21.3	23.4	25.8	27.9	c	45 23.54	53 28 10.0 6.5	III	43.460	14 45 32.79	−14 36 52.42	−14 4045
2	8.0	49.4	51.5	53.7	55.9	58.0	c	45 53.70	53 28 " "	III A	43.650	14 46 2.95	14 40 10.27	14 4050
3	9.1	9.2	11.3	15.6	17.2	19.8	$c_4 d_3$	46 7.06	53 28 " "	VI B	49.260	14 46 16.31	14 35 30.95	14 4051
4	9.0	40.9	43.0	45.1	47.4	49.5	c	1 45.18	54 50 10.0 7.0	III	50.575	15 1 54.48	16 1 8.34	15 4032
5	8.9	31.9	33.7	35.7	37.6	......	a	6 5.34	53 40 10.0 7.2	I	51.020	15 6 14.56	14 51 11.78	14 4140
6	8.3	59.3	1.0	3.0	4.9	7.0	a	6 32.52	52 50 10.0 7.6	I	50.800	15 6 41.69	14 1 5.65	13 4102
7	7.8	38.2	40.3	42.5	44.7	46.8	c	6 42.50	54 10 10.0 7.2	V	48.125	15 6 51.75	15 20 19.78	15 4050
8	9.0	20.3	22.4	24.6	26.8	29.0	c	9 24.62	53 34 10.0 6.0	III A	46.205	15 9 33.83	14 46 54.42	14 4155
9	9.2	42.9	45.0	47.0	49.0	51.4	c	9 47.06	53 34 " "	V B	49.135	15 9 56.26	14 41 23.03	14 4157
10	9.0	17.8	19.9	21.9	24.0	26.2	c	10 21.96	53 34 " "	VII B	44.660	15 10 31.16	−14 39 58.17	−14 4161
11	9.1	31.5	33.6	35.8	37.9	40.0	c	30 35.76	54 44 10.0 7.0	III	51.090	16 30 44.88	−15 54 57.06	−15 4350
12	7.5	48.0	50.0	52.3	54.4	56.5	c	1 52.24	54 48 10.0 6.9	III	47.200	17 2 1.30	15 57 34.51	15 4455
13	8.8	34.8	37.0	39.1	41.2	43.5	c	45 39.12	53 32 10.0 6.7	III	49.240	17 45 48.00	14 41 58.40	14 4790
14	9.1	51.3	53.2	55.4	57.6	59.7	c	51 55.44	54 26 10.0 7.0	III C	50.320	17 52 4.38	15 29 54.14	15 4741
15	8.4	39.3	41.4	43.6	45.8	47.9	c	52 43.60	54 26 " "	III	48.400	17 52 52.53	15 35 42.97	15 4747
16	9.3	2.2	4.0	5.8	7.8	9.9	a	54 35.65	54 36 10.0 7.6	III C	49.970	17 54 44.58	15 39 47.47	15 4764
17	8.9	40.3	42.4	44.6	46.6	48.8	c	54 44.54	54 36 " "	V A	44.640	17 54 53.47	15 47 47.54	15 4767
18	9.2	26.0	28.2	30.2	32.5	34.7	c	55 30.32	54 36 " "	V B	44.350	17 55 39.25	15 41 13.03	15 4777
19	9.0	52.6	54.6	56.9	59.0	1.2	c	55 56.86	54 36 " "	V C	46.690	17 56 5.78	15 38 45.05	15 4778
20	7.5	45.9	47.9	50.2	52.4	54.6	c	3 50.20	54 10 10.0 6.3	III	43.060	18 3 59.09	−15 17 56.45	−15 4840
21	9.2	1.5	3.6	5.6	7.8	10.0	c	4 5.70	54 10 " "	V B	47.370	18 4 14.59	−15 16 6.85	−15 4843
22	8.0	39.4	41.5	43.7	45.9	48.0	c	6 43.70	54 56 10.0 6.8	V B	46.460	18 6 52.63	16 1 51.11	16 4753
23	8.9	38.0	39.7	41.9	43.9	46.0	a	9 11.67	54 56 " "	I	50.440	18 9 20.61	16 6 17.75	16 4766
24	9.0	8.0	10.0	12.3	14.5	16.7	c	9 12.30	54 56 " "	III B	51.560	18 9 21.23	16 3 27.02	16 4767
25	9.3	26.3	30.6	32.8	36.9	38.5	$c_2 d_2$	9 28.43	54 56 " "	VI (C)	48.050	18 9 37.36	15 59 8.49	15 4893
26	9.2	27.5	29.7	31.6	33.4	35.5	e	11 1.90	53 20 10.0 6.5	VII A	42.420	18 11 10.72	14 30 57.63	14 4965
27	8.6	6.2	8.4	10.0	12.2	14.0	e	11 40.52	53 20 " "	VII	47.440	18 11 49.34	14 29 18.37	14 4971
28	9.0	28.2	30.6	32.6	34.3	36.3	e	12 2.76	53 20 " "	VII	49.690	18 12 11.58	14 30 1.48	14 4976
29	8.8	13.2	15.6	17.4	19.4	21.1	e	12 47.60	54 4 10.0 6.6	VII	48.935	18 12 56.48	15 13 48.82	15 4918
30	9.3	33.3	35.6	37.6	39.4	41.3	e	15 7.57	54 54 10.0 6.9	VII	48.370	18 15 16.50	−16 3 39.85	−16 4826
31	8.8	3.8	5.8	8.0	10.3	12.3	c	20 8.05	54 42 10.0 6.6	III	50.800	18 20 16.94	−15 52 22.42	−15 4968
32	9.2	23.0	25.0	27.4	29.5	31.6	c	21 27.30	54 42 " "	III C	48.890	18 21 36.18	15 45 19.49	15 4971
33	8.8	31.7	33.7	35.9	38.2	40.3	c	22 35.96	54 42 " "	III	49.450	18 22 44.85	15 51 55.85	15 4977
34	9.1	7.5	9.5	11.6	13.8	15.9	c	24 11.66	53 48 10.0 6.3	III C	52.050	18 24 20.48	14 52 16.78	14 5080
35	9.2	58.7	0.8	3.1	5.2	7.4	c	25 3.04	53 48 " "	III A	45.080	18 25 11.87	−14 59 44.02	−15 4995[1]

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
36	9.1	28.8	31.0	33.0	34.9	36.6	e	25 3.15	53 48 10.0	6.3	V A	44.580	18 25 11.98	−14 59 35.60	−15 4995[2]
37	8.0	39.9	41.9	44.0	46.3	48.5	c	26 44.12	54 38 10.0	6.5	III	44.750	18 26 53.00	15 46 24.39	15 5004
38	8.6	50.2	52.0	53.9	56.0	58.2	a	30 23.55	52 44 10.0	6.5	I A	42.730	18 30 32.29	13 54 53.35	13 5046
39	8.6	24.4	26.5	28.6	31.0	33.0	c	30 28.70	52 44 “	“	III B	44.240	18 30 37.44	13 48 54.82	13 5047
40	9.2	47.8	50.0	52.2	56.3	57.9	c_3 d_2	30 47.82	54 22 10.0	7.4	V	42.330	18 30 56.68	−15 29 37.67	−15 5029
41	8.1	13.3	15.0	17.0	19.0	21.3	a	36 46.83	54 26 10.0	7.0	I A	42.970	18 36 55.68	−15 37 1.25	−15 5067
42	9.1	42.7	44.3	48.5	50.7	52.9	b_2 c_3	36 52.85	54 26 “	“	III B	38.330	18 37 1.69	15 29 4.66	15 5069
43	9.2	16.4	18.6	20.5	22.5	24.5	e	36 50.66	54 44 10.0	7.0	VII A	36.880	18 36 59.53	15 53 8.80	15 5068
44	9.0	56.7	59.1	1.0	3.0	5.0	e	37 31.13	54 44 “	“	VII B	42.830	18 37 40.00	15 48 34.17	15 5071
45	8.3	55.2	57.3	59.3	1.5	3.7	c	48 59.40	55 34 10.0	6.6	III B	44.400	18 49 8.31	16 39 1.19	16 5074
46	9.1	4.7	6.8	9.0	11.3	13.4	c	50 9.04	55 34 “	“	III	43.490	18 50 17.94	16 41 57.08	16 5084
47	9.3	27.0	28.8	33.0	35.1	37.3	b_2 c_3	56 37.28	54 50 10.0	7.0	III A	46.710	18 56 46.13	16 2 10.60	16 5122
48	9.5	4.2	6.0	7.8	9.6	11.9	a	56 37.65	54 50 “	“	I B	41.430	18 56 46.49	15 53 58.86	15 5192
49	9.3	38.3	40.0	42.0	43.9	46.4	a	58 11.84	54 36 10.0	6.7	I	48.580	18 58 20.68	15 45 28.66	15 5210
50	8.7	5.0	6.5	10.7	12.8	14.9	b_2 c_3	58 15.01	54 20 10.0	7.4	III	49.130	18 58 23.83	−15 29 40.10	−15 5211
51	8.9	16.7	18.7	21.0	23.0	25.3	c	0 20.94	54 12 10.0	7.5	III B	46.080	19 0 29.75	−15 17 27.14	−15 5228
52	9.3	5.5	7.7	9.8	11.8	14.0	c	1 9.76	54 12 “	“	III B	41.630	19 1 18.56	15 16 1.53	15 5233
53	8.8	52.0	54.1	56.3	58.5	0.6	c	1 56.30	54 12 “	“	III B	43.590	19 2 5.10	15 16 38.97	15 5242
54	9.4	38.3	40.1	42.0	44.0	46.0	a	3 11.75	54 12 “	“	I	45.560	19 3 20.55	15 20 28.73	15 5248
55	9.0	53.2	55.3	57.5	1.6	3.2	c_3 d_2	2 53.16	53 34 10.0	6.3	VI B	41.370	19 3 1.91	14 37 55.64	14 5297
56	8.9	38.5	40.7	42.8	45.0	47.0	c	3 42.80	53 34 “	“	III A	42.290	19 3 51.56	14 44 40.06	14 5307
57	8.0	31.6	33.3	35.3	37.3	39.5	a	6 4.98	53 34 “	“	I A	43.550	19 6 13.73	14 45 2.27	14 5317
58	9.2	28.9	30.7	32.6	34.7	36.7	a	7 2.31	53 34 “	“	I A	46.590	19 7 11.06	14 46 0.38	14 5325
59	9.3	48.4	50.3	52.3	54.1	56.5	a	7 21.89	53 34 “	“	I C	48.880	19 7 30.62	14 37 3.37	14 5332
60	8.2	2.9	4.8	6.9	8.8	10.9	a	7 36.43	53 34 “	“	III C	48.250	19 7 45.16	−14 36 52.28	−14 5333
61	9.0	9.6	11.5	13.4	15.3	17.7	a	8 43.07	53 34 “	“	I B	42.460	19 8 51.80	−14 38 11.74	−14 5343
62	9.3	42.4	44.0	48.2	50.4	52.4	b_2 c_3	8 52.49	53 34 “	“	III C	47.150	19 9 1.22	14 36 30.88	14 5344
63	9.3	15.4	16.8	21.0	23.2	25.4	b_2 c_3	9 25.37	53 34 “	“	III B	42.490	19 9 34.10	14 38 13.64	14 5348
64	9.3	32.3	34.5	36.6	40.9	42.4	c_3 d_2	9 32.33	53 34 “	“	V	48.230	19 9 41.07	14 43 18.48	14 5349
65	9.3	6.3	8.4	10.5	12.7	14.9	c	11 10.56	53 34 “	“	III A	40.970	19 11 19.30	14 44 12.90	14 5366
66	8.0	34.7	36.7	39.0	41.1	43.4	c	11 38.98	53 34 “	“	V B	50.380	19 11 47.71	14 40 45.85	14 5371
67	8.5	41.6	43.1	47.6	49.7	51.8	b_2 c_3	12 51.77	53 34 “	“	III	48.000	19 13 0.51	14 43 12.13	14 5380
68	9.3	38.4	40.3	42.3	44.2	46.4	a	14 11.91	53 34 “	“	I A	45.940	19 14 20.65	14 45 46.18	14 5390
69	8.3	14.9	17.0	19.0	21.2	23.5	c	14 19.12	53 34 “	“	III B	42.450	19 14 27.85	14 38 11.69	14 5392
70	9.5	43.6	45.6	47.8	49.9	52.0	c	15 47.78	53 56 10.0	7.0	III C	44.860	19 15 56.53	−14 57 46.62	−15 5324
71	9.3	29.0	30.8	32.9	34.7	36.9	a	17 2.49	53 56 “	“	I B	47.500	19 17 11.24	−15 1 47.84	−15 5331
72	9.0	5.4	7.5	9.7	12.0	14.2	c	17 9.76	53 56 “	“	III A	41.440	19 17 18.52	15 6 21.92	15 5333
73	8.7	53.6	56.0	57.9	59.7	1.8	e	17 28.02	54 20 10.0	8.6	V	46.960	19 17 36.80	15 28 55.55	15 5335
74	8.8	55.1	57.3	59.5	1.6	3.8	c	19 59.46	54 42 10.0	7.0	III	48.150	19 20 8.26	15 51 16.94	15 5346
75	9.2	56.3	58.3	0.5	2.7	4.9	c	21 0.54	54 42 “	“	III C	48.760	19 21 9.33	−15 45 2.47	−15 5352

Reduction Elements. Zone 166.

	OBSERVED.			ADOPTED.		
1896.	c	b	a	c	b	a
	s	s	s	s	s	s
June 29.3	−0.064	+0.118		−0.064	+0.146	−0.138
29.5		+0.175	−0.138			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	2 Librae		Mayer 575		γ Scorpii		32 Librae		Bradley 2333		30 Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	50 4 9.45		58 48 9.00		63 42 8.50		55 12 9.00		62 26 8.50		61 8 8.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.......	51.620	7 41.25	52.490	7 57.19	49.650	7 3.21	47.470	6 21.62		6 4.04	44.525	5 24.15
II Red. to Mer.......	.640	1.70	.405	1.60	.625	1.55	.460	1.65		1.56	.450	1.58
VI Inclination	.450		.290		.490		.315		46.460	1.41	.260	
VII Refraction.......	.440	1 5.9	.290	1 31.1	.450	1 51.7	.295	1 19.6	.475	1 46.6	.315	1 41.0

	κ Aquilae		*f* Sagittarii	
	° ′ ″		° ′ ″	
CIRCLE READING.	46 6 8.50		58 52 8.90	
	r	′ ″	r	′ ″
I Microm. Eq......	48.600	6 42.62	44.020	5 15.29
II Red. to Mer......	.540	1.73	.000	1.60
VI Inclination	.420		43.855	
VII Refraction......	.360	58.2	.830	1 32.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
2 Librae	14 17 53.42	11	−0.08	−0.79	50 12 58.3	20.3
Mayer 575	14 29 3.32	10	−0.11	−0.81	58 57 38.9	20.1
γ Scorpii	14 58 3.26	11	−0.14	−1.09	63 51 5.0	20.9
32 Librae	15 22 27.62	11	−0.10	−0.94	55 19 51.9	21.1
Bradley 2333	18 32 16.35	11	−0.13	1.02	62 34 2.1	21.8
30 Sagittarii	18 44 40.51	11	−0.12	−1.01	61 15 14.7	20.7
λ Ursae Minoris	19 27 10.68	4	+7.60	[−1.00]	309 58	....
κ Aquilae	19 31 22.35	11	−0.06	−0.94	46 13 51.0	20.8
f Sagittarii	19 40 22.82	11	−0.11	−1.09	58 58 58.2	21.1

h 14.780 .... *dt* .... s −0.908

Hourly rate .... −0.0247

Adopted Equator Point .... 38° 58′ 20.85″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 13	29.862	77.3	75.8
15 0	29.872	75.2	74.0
16 0	29.886	73.8	73.0
16 59	29.900	72.2	71.3
18 0	29.912	71.9	71.3
18 54	29.922	71.3	70.3
19 38	29.928	70.8	69.6

Note.

λ Ursae Minoris. Image very steady.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.09	+10.25	+42.93	74.52	16	−0.10	+10.02	− 5.36	78.07	31	−0.10	+ 9.99	−12.11	78.[illegible]6
2	0.09	10.25	41.82	74.68	17	0.10	10.02	5.40	78.45	32	0.10	9.98	12.48	78.42
3	0.09	10.25	41.80	74.47	18	0.10	10.02	5.60	78.15	33	0.10	9.99	12.77	78.74
4	0.10	10.31	38.14	78.54	19	0.10	10.01	5.71	78.02	34	0.09	9.91	13.16	75.94
5	0.09	10.23	37.52	75.27	20	0.09	9.97	7.80	77.06	35	0.09	9.92	13.37	76.30
6	0.09	10.18	37.65	73.03	21	0.09	9.97	7.87	76.98	36	0.09	9.92	13.37	76.28
7	0.09	10.26	37.25	76.63	22	0.10	10.02	8.59	79.16	37	0.10	9.98	13.83	78.50
8	0.09	10.22	36.81	75.11	23	0.10	10.03	9.26	79.38	38	0.09	9.83	14.77	73.37
9	0.09	10.21	36.75	74.85	24	0.10	10.02	9.26	79.27	39	0.09	9.83	14.79	73.11
10	0.09	10.21	36.61	74.80	25	0.10	10.02	9.33	79.05	40	0.09	9.95	14.89	77.70
11	0.10	10.17	16.91	78.61	26	0.09	9.90	9.68	74.92	41	0.10	9.95	16.43	78.09
12	0.10	10.12	+ 8.71	78.90	27	0.09	9.90	9.83	74.83	42	0.10	9.94	16.47	77.71
13	0.09	9.95	− 2.88	75.37	28	0.09	9.90	9.94	74.89	43	0.10	9.97	16.44	78.85
14	0.09	10.01	4.64	77.61	29	0.09	9.96	10.17	76.90	44	0.10	9.97	16.62	78.63
15	−0.10	+10.01	− 4.86	77.88	30	−0.10	+10.02	−10.81	79.29	45	−0.10	+10.02	−19.59	81.17

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″
46	−0.10	+10.01	−19.80	81.30	61	−0.09	+9.84	−24.48	75.44
47	0.10	9.96	21.43	79.34	62	0.09	9.84	24.53	75.37
48	0.10	9.95	21.44	78.96	63	0.09	9.84	24.66	75.46
49	0.09	9.94	21.84	78.56	64	0.09	9.85	24.67	75.68
50	0.09	9.92	21.85	77.80	65	0.09	9.85	25.09	75.72
51	0.09	9.91	22.38	77.23	66	0.09	9.84	25.18	75.56
52	0.09	9.90	22.57	77.16	67	0.09	9.85	25.47	75.68
53	0.09	9.90	22.77	77.20	68	0.09	9.85	25.81	75.80
54	0.09	9.90	23.09	77.39	69	0.09	9.84	25.84	75.46
55	0.09	9.85	23.05	75.42	70	0.09	9.86	26.19	76.35
56	0.09	9.86	23.25	75.72	71	0.09	9.86	26.47	76.54
57	0.09	9.85	23.84	75.74	72	0.09	9.87	26.49	76.77
58	0.09	9.86	24.06	75.79	73	0.09	9.89	26.54	77.84
59	0.09	9.84	24.14	75.37	74	0.10	9.92	27.12	78.90
60	−0.09	+ 9.84	−24.22	75.37	75	−0.10	+9.91	−27.38	78.60

a = Instrumental corrections.
A = *α* to 1900.0
D = Z. D. S. to 1900.0.

1896 JULY 1. ZONE 167. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.0	42.0	44.0	45.8	47.9	50.0	a	43 15.79	55 24 10.0	6.6	I	51.290	14 43 24.88	−16 35 25.50	−16 3942[1]
2	9.0	11.8	13.8	16.0	18.3	20.4	c	43 16.06	55 24 "	"	III	50.970	14 43 25.16	16 35 20.68	16 3942[2]
3	9.1	1.0	2.6	4.8	6.8	8.9	a	45 34.67	55 24 "	"	I	47.880	14 45 43.76	16 34 19.58	16 3949[n]
4	8.9	30.4	32.6	34.8	36.9	39.0	c	45 34.74	55 24 "	"	III	49.290	14 45 43.84	16 34 47.96	16 3949[s]
5	......	0.5	3.1	5.0	7.0	9.1	c	46 4.94	55 44 10.0	7.2	V	43.400	14 46 14.04	16 52 57.15	16 3951
6	......	31.0	33.4	35.4	37.0	39.2	e	46 5.21	55 44 "	"	VII	47.360	14 46 14.31	16 54 14.08	16 3952
7	8.3	2.0	4.0	6.2	8.4	10.6	c	6 6.24	55 4 10.0	7.5	III	46.980	15 6 15.28	−16 13 59.08	−16 4025

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
8	9.0	25.2	27.3	29.5	31.8	33.9	c	44 29.54	56 6	10.0	8.5	III	44.200	15 44 38.57	−17 15 0.54	−17 4434
9	8.5	16.9	19.0	21.0	23.3	25.5	c	28 21.14	55 48	10.0	6.5	III	45.000	16 28 30.06	16 57 3.42	16 4307
10	8.9	8.5	10.5	12.4	14.4	16.6	a	23 42.52	56 34	10.0	6.9	I	47.745	17 23 51.38	−17 43 42.97	−17 4821^1
11	8.7	38.3	40.4	42.7	44.9	47.0	c	23 42.66	56 34	“	“	III	47.190	17 23 51.52	−17 43 33.67	−17 4821^2
12	9.1	6.5	8.6	10.9	13.3	15.3	c	51 10.92	56 56	10.0	7.8	III	44.240	17 51 19.76	18 4 31.53	18 4715
13	8.6	49.0	51.4	53.6	55.7	57.8	c	51 53.50	55 38	10.0	7.1	III	45.870	17 52 2.24	16 46 58.28	16 4667
14	7.8	41.2	43.3	45.5	47.7	49.8	c	52 45.50	55 38	“	“	III A	47.750	17 52 54.23	16 50 49.45	16 4671
15	8.3	59.6	1.5	3.4	5.4	7.7	a	2 33.35	55 20	10.0	6.5	I B	46.370	18 2 42.04	16 25 48.82	16 4720
16	8.9	29.6	31.6	33.9	36.2	38.4	c	2 33.94	55 20	“	“	III	49.840	18 2 42.64	16 30 10.52	16 4721
17	9.1	5.0	7.2	9.4	11.5	13.8	c	3 9.38	55 20	“	“	III B	44.000	18 3 18.06	16 25 4.70	16 4724
18	8.8	38.7	40.8	42.9	45.0	47.3	c	3 42.94	55 44	10.0	6.7	III	40.735	18 3 51.66	16 51 16.75	16 4728
19	9.2	32.3	34.2	36.3	38.1	40.4	a	5 6.25	56 20	10.0	8.0	III A	40.100	18 5 15.02	17 30 22.02	17 5054
20	8.7	8.4	10.6	12.8	15.0	17.1	c	5 12.78	56 20	“	“	III B	41.180	18 5 21.54	−17 24 13.81	−17 5055
21	8.9	42.3	44.2	46.1	48.1	50.3	a	6 16.18	56 20	“	“	I B	40.390	18 6 24.93	−17 23 56.86	−17 5064
22	8.4	36.2	37.7	42.0	44.2	46.4	b_2 c_3	6 46.38	56 20	“	“	III	37.610	18 6 55.14	17 26 18.46	17 5066
23	8.0	18.4	20.6	22.5	24.3	26.4	e	6 52.50	55 28	10.0	8.0	VII	42.760	18 7 1.20	16 35 56.69	16 4754
24	8.8	20.3	22.0	24.0	26.0	28.4	a	10 53.98	55 28	“	“	I B	44.170	18 11 2.66	16 33 5.55	16 4786
25	9.3	......	31.7	34.0	36.3	38.4	c	11 34.02	55 16	10.0	6.9	V B	41.485	18 11 42.69	16 20 15.60	16 4793
26	9.0	40.0	41.4	45.7	47.7	50.2	b_2 c_3	12 50.05	55 16	“	“	III B	43.260	18 12 58.72	16 20 48.00	16 4803
27	8.8	4.7	6.7	9.0	11.0	13.2	c	13 8.92	55 16	“	“	V B	42.200	18 13 17.59	16 20 28.91	16 4806
28	8.8	35.0	37.3	39.2	41.0	43.1	e	13 9.20	55 16	“	“	VII	45.870	18 13 17.88	16 24 53.65	16 4807
29	9.1	28.5	30.6	32.9	35.0	37.2	c	14 32.84	55 6	10.0	7.8	V	44.920	18 14 41.50	16 14 34.09	16 4816
30	8.6	11.0	15.3	17.4	19.4	21.7	(b_3c_4)	15 19.54	55 18	10.0	8.4	III	40.600	18 15 28.21	−16 25 10.74	−16 4829
31	8.6	26.5	28.6	32.9	34.5	......	c_4 d_2	15 24.32	55 18	“	“	V	40.310	18 15 32.99	−16 25 6.25	−16 4830
32	8.0	19.5	21.7	23.8	25.6	27.6	e	15 53.73	55 18	“	“	V (B)	41.380	18 16 2.40	16 22 13.28	16 4836
33	9.3	24.3	26.4	28.6	30.7	33.0	c	17 28.60	56 6	10.0	8.9	III B	42.050	18 17 37.32	17 10 27.07	17 5175
34	9.1	0.9	3.3	5.2	7.0	9.0	e	17 35.03	56 6	“	“	V	45.380	18 17 43.75	17 14 45.67	17 5176
35	9.2	45.2	47.3	49.5	51.7	53.9	c	19 49.52	56 6	“	“	III C	44.240	18 19 58.23	17 7 56.18	17 5190
36	8.2	54.3	56.4	58.6	0.8	2.9	c	20 58.60	56 6	“	“	III	47.360	18 21 7.32	17 15 21.67	17 5196
37	8.0	48.2	50.4	52.5	54.7	56.8	c	21 52.52	55 20	10.0	6.5	III	47.260	18 22 1.18	16 29 16.01	16 4884
38	8.5	2.8	5.0	7.2	9.3	11.4	c	23 7.14	55 20	“	“	III	45.550	18 23 15.80	16 28 42.89	16 4893
39	9.1	51.0	52.9	55.2	57.2	59.4	c	28 55.14	55 8	10.0	7.9	III B	42.770	18 29 3.77	16 12 34.58	16 4936
40	8.8	18.3	20.4	22.7	24.8	27.0	(c)	29 22.64	55 8	“	“	V	48.690	18 29 31.27	−16 17 42.78	−16 4939
41	7.4	50.1	52.3	54.4	56.6	58.8	c	31 54.44	56 10	10.0	8.0	III	46.240	18 32 3.13	−17 18 57.17	−17 5271
42	8.8	19.1	21.2	23.6	25.7	27.8	c	35 23.48	55 58	10.0	7.9	III A	45.860	18 35 32.16	17 10 3.65	17 5288
43	8.0	9.5	11.6	13.7	15.8	18.2	c	36 13.76	55 58	“	“	III	44.480	18 36 22.43	17 6 21.64	17 5291
44	8.2	51.0	53.0	55.3	57.6	59.7	c	37 55.32	55 58	“	“	III B	42.180	18 38 3.98	17 2 23.53	17 5303
45	9.0	15.4	17.6	19.8	22.0	24.3	c	45 19.82	56 22	10.0	7.0	III	46.720	18 45 28.51	17 31 3.21	17 5345
46	8.8	35.7	37.7	39.9	42.2	44.5	c	45 40.00	56 22	“	“	V C	49.960	18 45 48.68	17 25 40.25	17 5350
47	9.2	48.1	50.3	52.5	54.7	57.0	c	48 52.52	56 12	10.0	7.4	III B	45.310	18 49 1.18	17 17 21.32	17 5371
48	9.2	56.6	58.8	1.0	3.1	5.4	c	50 0.98	56 12	“	“	III	45.940	18 50 9.65	17 20 46.74	17 5382
49	8.7	49.1	51.2	53.5	55.7	57.8	c	50 53.46	56 12	“	“	III A	41.430	18 51 2.13	17 22 35.27	17 5389
50	8.0	40.7	42.7	44.9	47.0	49.4	c	53 44.94	55 10	10.0	6.6	III B	43.510	18 53 53.52	−16 14 42.02	−16 5108
51	9.4	6.0	8.0	10.3	12.5	14.6	c	54 10.28	55 10	“	“	III A	43.610	18 54 18.87	−16 21 12.75	−16 5109
52	9.1	0.5	2.6	4.9	7.0	9.2	c	55 4.84	55 10	“	“	III A	43.700	18 55 13.43	16 21 14.23	16 5113
53	8.8	30.6	32.7	34.8	37.0	39.0	c	55 34.82	55 10	“	“	III B	49.600	18 55 43.40	16 16 38.38	16 5116
54	9.3	31.8	33.8	36.0	38.3	40.5	c	59 36.08	56 12	10.0	7.9	III	41.050	18 59 44.72	17 19 10.81	17 5460
55	8.9	42.6	44.7	46.9	49.0	51.3	c	0 46.90	56 12	“	“	III C	49.490	19 0 55.53	17 15 26.57	17 5470
56	8.9	14.1	15.8	17.8	19.8	22.0	a	0 47.88	56 12	“	“	I A	45.810	19 0 56.52	17 23 55.81	17 5469
57	8.4	18.3	20.2	22.6	24.7	26.9	c	1 22.54	56 12	“	“	III A	45.280	19 1 31.18	17 23 46.89	17 5478
58	9.3	49.4	51.7	53.6	55.5	57.4	e	1 23.46	56 12	“	“	VII B	47.400	19 1 32.09	17 18 1.08	17 5479
59	8.9	41.0	43.4	45.4	47.3	49.2	e	2 15.19	56 12	“	“	VII A	42.565	19 2 23.83	17 22 56.75	17 5488
60	9.0	29.1	31.5	33.4	35.2	37.3	e	3 3.39	55 18	10.0	7.0	VII B	43.075	19 3 11.97	−16 22 34.43	−16 5169
61	9.1	22.2	24.5	26.6	28.8	31.0	c	4 26.62	55 18	“	“	III A	38.850	19 4 35.20	−16 27 39.49	−16 5183
62	9.2	31.2	33.2	35.5	37.6	39.7	c	5 35.44	55 18	“	“	III	42.810	19 5 44.02	16 25 39.89	16 5190
63	9.1	18.4	20.6	22.8	24.9	27.1	c	6 22.76	55 18	“	“	III	49.180	19 6 31.34	16 27 41.97	16 5198
64	9.0	15.4	17.6	19.9	22.0	24.3	c	7 19.84	56 8	10.0	8.1	III	44.915	19 7 28.46	17 16 23.01	17 5525
65	9.2	35.2	37.0	39.2	41.0	43.2	a	9 8.90	55 2	10.0	7.0	I	40.635	19 9 17.45	16 8 55.18	16 5215^1
66	9.2	5.0	6.9	9.2	11.4	13.4	c	9 9.18	55 2	“	“	III	40.880	19 9 17.73	16 9 1.21	16 5215^2
67	9.0	34.4	36.5	38.7	40.9	43.0	c	9 38.70	55 54	10.0	7.4	V	43.520	19 9 47.30	17 1 55.74	17 5540
68	8.9	15.2	17.4	19.5	21.7	23.9	c	10 19.54	56 0	10.0	7.5	V	46.110	19 10 28.15	17 8 45.64	17 5546
69	8.6	51.9	53.9	56.2	58.3	0.5	c	11 56.16	56 0	“	“	III B	47.660	19 12 4.76	17 6 0.44	17 5564
70	9.3	2.8	4.7	7 0	9.3	11.6	c	13 7.08	56 0	“	“	III B	43.200	19 13 15.68	−17 4 34.38	−17 5578
71	9.1	24.4	26.4	28.6	30.9	33.2	c	13 28.70	56 0	“	“	III	44.440	19 13 37.30	17 8 11.66	−17 5579

Reduction Elements. Zone 167.

	OBSERVED.			ADOPTED.		
1896.	c	b	a	c	b	a
	s	s	s	s	s	s
July 1.4....	−0.041	+0.146	−0.114	−0.041	+0.146	−0.114

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	2 Librae		Mayer 575		γ Scorpii		β Librae		30 Sagittarii		*h* Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	50 6 9.10		58 50 9.00		63 42 8.00		47 52 8.35		61 8 8.40		63 58 8.10	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	45.385	5 41.35	46.255	5 58.02	49.700	7 3.88	44.380	5 21.85	44.460	5 25.42	43.360	5 4.15
II Red. to Mer.	.360	1.70	.200	1.60	.650	1.55	.345	1.71	.450	1.58	.330	1.55
VI Inclination	.205		.095		.515		.180			−1.41		−1.41
VII Refraction	.190	1 5.9	.065	1 31.1	.490	1 51.8	.165	1 1.3		1 41.7		1 54.8

	κ Aquilae		*f* Sagittarii	
	° ′ ″		° ′ ″	
CIRCLE READING.	46 8 8.50		58 52 8.30	
	r	′ ″	r	′ ″
I Microm. Eq.		4 41.08	44.040	5 15.25
II Red. to Mer.		1.73	43.995	1.60
VI Inclination	42.150	1.41	.845	
VII Refraction	.135	58.6	.815	1 33.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
2 Librae	14 17 53.75	11	−0.04	−1.20	50 12 58.1	20.3
Mayer 575	14 29 3.59	11	−0.07	−1.15	58 57 39.7	20.9
γ Scorpii	14 58 3.43	11	−0.09	−1.32	63 51 5.2	21.0
β Librae	15 11 28.93	11	−0.03	−1.30	47 58 33.2	20.9
30 Sagittarii	18 44 40.80	11	−0.08	−1.33	61 15 15.7	21.7
λ Ursae Minoris	19 27 10.87	7	+7.86	[−1.32]	310 0	....
h Sagittarii	19 30 28.19	11	−0.09	1.31	64 5 7.2	22.7
κ Aquilae	19 31 22.65	11	−0.02	−1.25	46 13 51.3	21.4
f Sagittarii	19 40 23.06	11	−0.07	−1.45	58 58 58.2	21.1

h 14.735 .... *dt* .... s −1.242

Hourly rate .... −0.0201

Adopted Equator Point .... 38° 58′ 21.25″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 3	30.054	80.5	79.4
15 1	30.056	77.5	76.6
16 0	30.058	75.1	74.1
17 57	30.062	71.9	70.5
18 56	30.058	70.2	69.1
19 37	30.040	69.7	68.0

Note.
λ Ursae Minoris. Image very steady.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.06	+10.39	+41.87	80.19	16	−0.05	+10.06	−7.47	81.08	31	−0.05	+10.03	−10.85	80.87
2	0.05	10.39	41.87	80.19	17	0.06	10.05	7.62	80.82	32	0.05	10.03	10.98	80.74
3	0.06	10.39	41.38	80.15	18	0.06	10.09	7.81	82.15	33	0.06	10.09	11.43	83.21
4	0.05	10.39	41.38	80.17	19	0.06	10.14	8.21	84.20	34	0.06	10.09	11.46	83.43
5	0.06	10.40	41.20	81.08	20	0.06	10.13	8.23	83.87	35	0.06	10.08	12.02	83.08
6	0.06	10.40	41.19	81.15	21	0.06	10.12	8.49	83.87	36	0.06	10.09	12.33	83.46
7	0.05	10.34	37.21	79.30	22	0.06	10.13	8.65	83.98	37	0.06	10.03	12.55	81.13
8	0.06	10.35	28.17	82.62	23	0.05	10.06	8.64	81.40	38	0.05	10.03	12.85	81.10
9	0.06	10.26	17.35	81.98	24	0.06	10.05	9.68	81.26	39	0.05	10.00	14.35	80.32
10	0.06	10.22	2.70	84.68	25	0.05	10.03	9.82	80.63	40	0.05	10.00	14.48	80.58
11	0.06	10.22	+2.70	84.68	26	0.05	10.03	10.16	80.65	41	0.06	10.07	15.15	83.71
12	0.06	10.20	−4.60	85.96	27	0.05	10.03	10.24	80.65	42	0.06	10.06	16.04	83 27
13	0.06	10.10	4.67	81.88	28	0.05	10.04	10.25	80.87	43	0.06	10.05	16.25	83.08
14	0.06	10.10	4.90	82.07	29	0.05	10.02	10.60	80.35	44	0.06	10.04	16.67	82.91
15	−0.06	+10.06	−7.46	80.85	30	−0.05	+10.03	−10.82	80.89	45	−0.06	+10.07	−18.53	84.41

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″
46	−0.06	+10.06	−18.61	84.12	59	−0.06	+10.03	−22.72	84.04
47	0.06	10.04	19.44	83.70	60	0.05	9.96	22.93	80.94
48	0.06	10.05	19.71	83.89	61	0.05	9.96	23.28	81.21
49	0.06	10.05	19.94	83.98	62	0.05	9.96	23.58	81.12
50	0.05	9.96	20.65	80.52	63	0.05	9.96	23.77	81.23
51	0.05	9.97	20.74	80.84	64	0.06	10.01	23.96	83.71
52	0.05	9.97	20.99	80.84	65	0.05	9.93	24.43	80.30
53	0.05	9.96	21.21	80 65	66	0.05	9.93	24.43	80.30
54	0.06	10.03	22.08	83.85	67	0.06	9.99	24.52	82.98
55	0.06	10.02	22.38	83.66	68	0.06	10.00	24.69	83.33
56	0.06	10.03	22.37	84.10	69	0.06	9.99	25.07	83.35
57	0.06	10.03	22.52	84.10	70	0.06	9.99	25.36	83.10
58	−0.06	+10.02	−22.52	83.79	71	−0.06	+9.99	−25.45	83.27

a = Instrumental corrections.
A = α to 1900.0.
D = Z. D. S. to 1900.0.

1896 JULY 17. ZONE 168. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	9.0	11.1	13.1	15.4	17.5	19.7	c	53 15.36	53	58	10.0	15.6	III A	48.750	17 53 22.12	−15 12 33.78	−15 4752
2	8.3	36.4	38.7	40.9	42.9	45.0	c	53 40.78	53	58	"	"	V	46.325	17 53 47.53	15 8 32.98	15 4756
3	9.0	46.8	48.7	51.0	53.0	55.3	c	54 50.96	53	58	"	"	III B	40.810	17 54 57.70	15 3 32.13	15 4768
4	9.2	46.8	48.7	50.6	52.5	54.7	a	3 20.14	52	50	10.0	16.6	I	47.170	18 3 26.78	14 0 41.77	14 4904
5	7.0	22.7	24.5	26.5	28.4	30.5	a	3 55.99	52	50	"	"	I B	45.985	18 4 2.63	13 57 5.11	13 4863
6	8.9	55.0	57.0	59.3	1.5	3.7	c	3 59.30	54	24	10.0	17.1	III	44.790	18 4 6.06	15 34 1.61	15 4842
7	9.2	21.6	23.6	25.8	27.9	30.2	c	5 25.82	53	16	10.0	15.4	III	46.815	18 5 32.49	14 26 36.22	14 4918
8	9.3	56.7	58.7	0.9	3.0	5.2	c	6 0.90	53	56	10.0	15.4	V	47.225	18 6 7.61	15 6 46.81	15 4857
9	8.8	14.9	16.5	18.6	20.6	22.9	a	9 48.45	54	50	10.0	17.0	I C	50.780	18 9 55.20	15 55 29.20	15 4896
10	9.2	21.9	24.3	26.1	28.0	30.0	e	9 56.20	54	50	"	"	VII A	44.760	18 10 2.97	−16 3 18.15	−16 4777
11	9.4	54.2	56.2	58.3	0.5	2.7	c	9 58.38	54	50	"	"	III C	51.970	18 10 5.14	−15 55 53.11	−15 4897
12	7.5	42.5	44.4	46.6	48.8	50.9	c	11 46.64	54	20	10.0	16.5	III B	48.735	18 11 53.36	15 28 1.23	15 4911
13	9.3	31.4	33.5	35.8	37.9	40.0	c	12 35.72	54	20	"	"	III	41.050	18 12 42.44	15 28 47.14	15 4916
14	9.2	5.5	7.6	9.9	12.0	14.3	c	13 9.86	54	20	"	"	III	47.300	18 13 16.58	15 30 46.92	15 4921
15	9.4	52.0	54.1	56.4	58.5	0.6	c	14 56.32	53	56	10.0	15.6	III	45.720	18 15 3.01	15 6 14.59	15 4934
16	9.0	15.6	17.7	20.0	22.1	24.4	c	22 19.96	54	26	10.0	16.0	III B	48.570	18 22 26.66	15 33 55.38	15 4975
17	9.1	52.2	54.4	56.7	58.9	1.0	c	22 56.64	54	26	"	"	III	49.070	18 23 3.34	15 37 18.38	15 4979
18	8.7	22.8	24.8	27.3	29.5	31.7	c	23 27.22	54	10	10.0	15.5	III	47.550	18 23 33.90	15 20 48.11	15 4982
19	8.6	44.8	47.0	49.3	51.5	53.6	c	24 49.24	54	38	10.0	16.2	III	46.590	18 24 55.95	15 48 30.96	15 4991
20	8.0	51.2	53.3	55.5	57.6	59.9	c	30 55.50	54	56	10.0	16.5	III B	41.525	18 31 2.19	−16 1 39.65	−16 4952
21	9.5	15.7	17.9	20.0	22.1	24.6	c	31 20.06	54	56	"	"	V A	38.240	18 31 26.76	−16 7 6.56	−16 4957
22	8.9	45.4	47.2	49.0	51.1	53.3	a	36 18.92	54	36	10.0	17.1	I	43.155	18 36 25.59	15 45 21.16	15 5062
23	9.0	32.5	34.6	36.7	38.9	41.0	c	36 36.74	53	34	10.0	16.3	III	46.680	18 36 43.33	14 44 26.81	14 5158
24	9.1	19.5	21.6	23.8	25.9	28.0	c	37 23.76	53	34	"	"	III A	43.950	18 37 30.36	14 46 49.55	14 5163
25	9.3	28.6	30.6	32.7	35.0	37.0	c	37 32.78	53	34	"	"	V A	40.390	18 37 39.37	14 45 42.38	14 5164
26	8.9	56.1	58.2	0.4	2.6	4.7	c	50 0.40	53	56	10.0	16.0	III	41.800	18 50 6.98	15 4 50.67	15 5152
27	9.3	13.0	15.0	17.4	19.4	21.5	c	56 17.26	52	40	10.0	15.5	V	42.260	18 56 23.74	13 48 55.50	13 5192
28	8.6	23.0	25.3	27.5	29.5	31.8	c	58 27.42	53	20	10.0	15.5	III	41.990	18 58 33.94	14 28 50.36	14 5277
29	8.5	20.4	22.3	24.2	26.0	28.3	a	0 53.95	54	28	10.0	16.4	I	44.115	19 1 0.54	15 37 32.84	15 5231
30	8.7	45.8	47.6	49.5	51.5	53.5	a	1 19.09	53	4	10.0	16.3	I	44.070	19 1 25.58	−14 13 27.97	−14 5287
31	9.4	5.6	7.6	9.8	12.0	14.2	c	2 9.84	54	14	10.0	16.2	III	42.240	19 2 16.41	−15 22 57.12	−15 5243
32	9.2	8.1	10.3	12.5	14.5	16.7	c	3 12.42	54	14	"	"	III A	43.150	19 3 18.99	15 26 29.59	15 5247
33	9.3	42.0	44.2	46.3	48.6	50.7	c	3 46.36	54	14	"	"	III A	39.710	19 3 52.92	15 25 23.47	15 5251
34	7.7	58.7	0.6	2.9	5.0	7.1	c	5 2.86	54	4	10.0	16.3	III	46.910	19 5 9.41	15 14 25.63	15 5259
35	8.2	23.0	25.1	27.3	29.5	31.6	c	5 27.30	53	6	10.0	16.2	V B	44.820	19 5 33.78	14 12 30.48	14 5313
36	8.9	54.5	56.5	58.7	0.8	3.0	c	5 58.70	53	6	"	"	V B	42.500	19 6 5.17	14 11 45.83	14 5316
37	9.3	8.6	10.5	12.8	14.9	17.0	c	7 12.76	53	6	"	"	III	47.970	19 7 19.24	14 16 42.76	14 5330
38	7.5	10.0	11.8	14.0	16.2	18.5	c	8 14.10	53	6	"	"	III B	45.080	19 8 20.57	14 12 33.48	14 5339
39	9.3	41.9	43.9	45.8	47.7	49.9	a	12 15.45	53	46	10.0	16.5	I	44.880	19 12 21.96	14 55 42.90	15 5304
40	9.1	18.7	20.6	22.6	24.5	26.6	a	12 52.22	53	46	"	"	I A	45.180	19 12 58.73	−14 59 3.74	−15 5308
41	8.8	0.6	2.9	5.0	7.2	9.3	c	13 5.00	53	8	10.0	16.2	III A	40.540	19 13 11.46	−14 19 34.17	−14 5382
42	8.0	42.8	44.8	47.0	49.2	51.3	c	13 47.02	53	8	"	"	III A	42.700	19 13 53.48	[14 20 15.44]	14 5387
43	9.5	14.0	15.8	18.0	20.2	22.2	c	14 18.04	53	8	"	"	III B	41.040	19 14 24.49	14 13 14.59	14 5391
44	8.0	54.8	56.9	59.0	1.1	3.5	c	15 59.06	53	8	"	"	III B	41.120	19 16 5.51	14 13 15.73	14 5404
45	8.6	24.0	25.7	27.7	29.6	31.8	a	16 57.27	53	8	"	"	I B	42.290	19 17 3.72	14 13 36.47	14 5411
46	9.3	55.8	58.0	0.2	2.4	4.5	c	17 0.18	53	8	"	"	III	37.720	19 17 6.63	14 15 23.80	14 5412
47	8.6	9.0	10.9	13.0	15.0	17.0	a	18 42.57	53	38	10.0	16.1	I	48.180	19 18 49.05	14 48 44.14	14 5422
48	9.2	58.6	0.6	2.7	4.9	7.0	c	19 2.76	53	38	"	"	III	51.480	19 19 9.24	14 49 48.71	14 5425
49	8.0	32.5	34.6	36.7	38.9	41.0	c	19 36.74	53	38	"	"	III C	51.355	19 19 43.21	14 43 20.27	14 5427
50	7.8	33.4	35.5	37.7	39.8	41.9	c	20 37.66	53	38	"	"	III B	46.460	19 20 44.13	−14 44 58.40	−14 5435
51	8.2	46.9	49.0	51.2	53.4	55.5	c	22 51.20	53	8	10.0	16.4	III A	47.840	19 22 57.64	−14 21 52.05	−14 5441
52	8.4	36.0	37.8	40.1	42.2	44.3	c	25 40.08	53	8	"	"	III C	45.090	19 25 46.50	14 11 17.45	14 5452
53	9.3	13.6	15.7	17.9	20.0	22.4	c	26 17.92	53	50	10.0	16.8	III B	41.430	19 26 24.39	14 55 21.47	15 5379
54	9.3	32.5	34.6	36.9	39.0	41.3	c	27 36.86	53	50	"	"	III B	50.280	19 27 43.33	14 58 10.99	15 5387
55	8.9	24.2	26.1	28.4	30.6	32.8	c	28 28.42	53	50	"	"	III A	42.850	19 28 34.89	15 2 17.11	15 5396
56	9.3	54.1	56.3	58.5	0.6	2.7	c	29 58.44	53	20	10.0	16.7	III B	39.560	19 30 4.87	14 24 43.32	14 5470
57	8.8	19.0	21.0	23.3	25.5	27.7	c	30 23.30	53	20	"	"	III	36.540	19 30 29.73	14 26 58.85	14 5472
58	6.0	16.4	18.2	20.2	22.0	24.5	a	31 49.81	53	20	"	"	I A	39.985	19 31 56.24	14 31 18.56	14 5479
59	9.5	46.0	47.9	49.8	51.7	53.9	a	32 19.58	54	32	10.0	16.1	I A	44.290	19 32 26.09	15 44 44.10	15 5412
60	9.4	43.4	45.1	47.2	49.0	51.3	a	33 16.92	54	32	"	"	III A	40.715	19 33 23.42	−15 43 36.68	−15 5417
61	9.2	14.9	16.5	18.5	20.5	22.7	a	33 48.32	54	32	"	"	III B	37.270	19 33 54.81	−15 36 1.54	−15 5419

Reduction Elements. Zone 168.

	OBSERVED.			ADOPTED.		
1896.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 17.5....	−0.079	+0.195	−0.164	−0.079	+0.195	−0.164

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		51 Ophiuchi		ξ Serpentis		o Serpentis		Mayer 703		30 Sagittarii		Piazzi XVIII. 260	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		62 42 12.95		54 10 12.95		51 38 13.20		57 36 13.95		61 6 13.50		54 16 13.35	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	46.340	5 59.75	47.890	5 31.85	48.925	6 48.98	47.450	6 20.79	46.050	5 53.56	43.710	5 10.67
II	Red. to Mer.	.290	1.56	.880	1.66	.870	1.68	.430	1.62	45.980	1.58	.660	1.66
VI	Inclination	.190		.720		.730		.250		.835			−1.41
VII	Refraction	.160	1 49.1	.670	1 18.0	.725	1 11.4	.240	1 28.9	.825	1 42.2		1 18.5

		f Sagittarii		51 Aquilae	
		° ′ ″		° ′ ″	
CIRCLE READING.		58 50 13.45		49 52 13.25	
		r	′ ″	r	′ ″
I	Microm. Eq.	45.540	5 44.29	43.710	5 6.96
II	Red. to Mer.	.535	1.60	.640	1.70
VI	Inclination	.345		.530	
VII	Refraction	.330	1 33.4	.490	1 7.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
51 Ophiuchi	17 25 11.30	11	−0.15	−3.05	62 50 3.4	57.4
ξ Serpentis	17 31 44.72	11	−0.10	−3.18	54 17 4.5	56.5
o Serpentis	17 35 40.97	11	−0.09	−3.05	51 46 15.3	57.6
Mayer 703	17 49 54.99	11	−0.12	−3.05	57 44 5.3	57.2
30 Sagittarii	18 44 42.75	11	−0.14	−3.07	61 13 50.8	57.0
Piazzi XVIII. 260	18 55 44.03	11	−0.10	−3.03	54 22 42.8	57.1
λ Ursae Minoris	19 27 7.70	3	−9.65	[−3.02]	309 58	....
f Sagittarii	19 40 25.00	11	−0.13	−3.00	58 57 32.7	56.3
51 Aquilae	19 45 10.52	11	−0.08	−3.09	49 58 28.9	54.5

h 18.434	*dt*	s − 3.065
	Hourly rate	0.0000
	Adopted Equator Point	° ′ ″ 38 56 56.70

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 27	30.026	68.2	66.9
18 16	30.032	67.4	66.9
19 9	30.040	66.8	66.2
19 47	30.044	66.6	66.2

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.10	+9.92	−4.24	77.76	14	−0.10	+9.88	−9.50	78.67	27	−0.09	+9.63	−20.30	74.06
2	0.10	9.91	4.34	77.59	15	0.10	9.85	9.92	77.50	28	0.10	9.68	20.90	75.84
3	0.10	9.90	4.64	77.34	16	0.10	9.86	11.89	78.83	29	0.10	9.75	21.55	79.09
4	0.10	9.80	6.72	74.47	17	0.10	9.86	12.06	79.00	30	0.10	9.65	21.58	75.14
5	0.09	9.79	6.86	74.30	18	0.10	9.84	12.15	78.20	31	0.10	9.73	21.86	78.40
6	0.10	9.92	7.11	78.80	19	0.10	9.87	12.56	79.54	32	0.10	9.73	22.12	78.54
7	0.10	9.83	7.34	75.65	20	0.11	9.86	14.14	80.20	33	0.10	9.72	22.25	78.51
8	0.10	9.87	7.59	77.52	21	0.11	9.87	14.26	80.46	34	0.10	9.71	22.54	78.00
9	0.11	9.92	8.70	79.86	22	0.10	9.83	15.50	79.41	35	0.10	9.64	22.58	75.13
10	0.10	9.93	8.75	80.24	23	0.10	9.75	15.47	76.51	36	0.10	9.63	22.71	75.09
11	0.10	9.92	8.72	79.87	24	0.10	9.76	15.65	76.63	37	0.10	9.64	23.01	75.32
12	0.10	9.88	9.13	78.52	25	0.10	9.75	15.69	76.58	38	0.10	9.63	23.26	75.13
13	−0.10	+9.88	−9.34	78.58	26	−0.10	+9.74	−18.87	77.50	39	−0.10	+9.67	−24.25	77.11

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″
40	−0.10	+9.67	−24.40	77.27	51	−0.10	+9.60	−26.73	75.56
41	0.10	9.62	24.42	75.46	52	0.10	9.58	27.37	75.08
42	0.10	9.62	24.58	75.48	53	0.10	9.63	27.53	77.09
43	0.10	9.61	24.70	75.16	54	0.10	9.63	27.86	77.23
44	0.10	9.61	25.10	75.16	55	0.10	9.63	28.04	77.43
45	0.10	9.61	25.33	75.18	56	0.10	9.59	28.36	75.68
46	0.10	9.61	25.36	75.27	57	0.10	9.59	28.46	75.79
47	0.10	9.64	25.78	76.79	58	0.10	9.59	28.80	76.00
48	0.10	9.64	25.85	76.84	59	0.10	9.67	28.95	79.45
49	0.10	9.63	25.99	76.54	60	0.10	9.66	29.15	79.40
50	−0.10	+9.63	−26.23	76.61	61	−0.10	+9.65	−29.28	79.03

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1896 JULY 25. ZONE 169. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.0	32.1	34.1	36.5	38.5	40.8	c	12 36.40	55 58 10.0 10.5	III	42.125	16 12 42.29	−17 8 28.92	−17 4534
2	8.3	45.9	48.0	50.2	52.3	54.5	c	26 50.18	54 34 10.0 10.3	III	47.940	16 26 55.92	15 46 13.11	15 4335
3	8.5	7.9	10.0	12.3	14.3	16.5	c	42 12.20	54 36 10.0 9.8	III	44.220	16 42 17.89	15 46 57.64	15 4392
4	8.6	46.0	48.1	50.3	52.5	54.7	c	57 50.32	54 32 10.0 10.2	III	45.850	16 57 55.95	15 43 25.01	15 4438
5	8.8	38.5	40.3	42.4	44.4	46.6	a	4 12.39	56 4 10.0 11.0	I	40.320	18 4 17.88	17 13 24.89	17 5044
6	9.2	16.1	18.0	20.0	21.9	24.0	a	4 49.94	56 4 " "	I B	38.435	18 4 55.43	17 9 34.77	17 5051
7	8.8	37.9	40.7	42.4	46.8	48.9	b_1 c_2	4 51.00	56 4 " "	II B	38.860	18 4 56.49	17 9 43.70	17 5052
8	8.8	7.4	9.9	11.7	15.7	18.1	b_1 c_2	5 20.20	55 34 10.0 11.0	IV	40.450	18 5 25.65	16 43 27.56	16 4744
9	9.0	17.3	19.8	21.7	23.5	25.4	e	5 51.67	54 56 10.0 10.5	VII	42.225	18 5 57.08	16 6 2.94	16 4746
10	8.3	1.2	3.6	5.5	7.4	9.4	e	6 35.51	55 14 10.0 10.6	VII	42.855	18 6 40.94	−16 24 13.74	−16 4752
11	9.0	22.4	24.5	26.7	28.6	30.6	e	6 56.66	55 14 " "	VII C	47.300	18 7 2.08	−16 19 12.55	−16 4755
12	8.9	53.3	55.4	57.7	59.9	2.0	c	9 57.66	54 52 10.0 10.3	III	46.430	18 10 3.05	16 3 18.28	16 4777
13	7.3	12.6	14.8	16.9	19.0	21.4	c	11 16.94	56 14 10.0 11.2	III	43.670	18 11 22.42	17 24 29.27	17 5112
14	8.9	32.9	35.0	37.3	39.4	41.7	c	12 37.26	56 0 10.0 11.5	III B	48.580	18 12 42.72	17 8 49.09	17 5122
15	9.0	25.9	28.0	29.9	31.9	34.1	a	13 59.89	56 0 " "	I B	42.460	18 14 5.34	17 6 49.77	17 5136
16	9.2	54.9	56.5	1.0	3.0	5.2	b_2 c_3	14 5.19	56 0 " "	III B	39.950	18 14 10.64	17 6 3.08	17 5137
17	9.1	9.3	11.4	13.9	17.8	19.4	c_3 d_2	14 9.29	56 0 " "	V B	39.790	18 14 14.74	17 6 1.32	17 5139
18	9.3	42.7	45.3	47.2	49.0	51.0	e	14 17.01	56 0 " "	VII	40.580	18 14 22.46	17 9 30.76	17 5140
19	8.5	6.2	8.5	10.8	15.0	16.5	c_3 d_2	15 6.33	56 0 " "	V A	37.360	18 15 11.78	17 11 43.24	17 5149
20	9.0	23.4	25.5	27.6	29.9	32.1	c	16 27.70	55 50 10.0 11.6	III (B)	39.370	18 16 33.13	−16 55 50.92	−16 4839
21	8.6	52.5	54.3	56.6	58.8	1.0	c	16 56.64	55 50 " "	III	37.190	18 17 2.07	−16 58 22.53	−16 4847
22	9.0	13.8	16.0	18.1	22.4	23.9	c_3 d_2	17 13.78	55 50 " "	VI A	44.480	18 17 19.22	17 3 59.38	17 5172
23	9.1	17.4	19.7	21.8	24.0	26.2	c	20 21.82	55 42 10.0 10.9	III	44.740	18 20 27.23	16 52 45.85	16 4872
24	8.8	7.1	9.0	10.9	12.9	15.2	a	35 40.79	54 52 10.0 10.0	I A	41.260	18 35 46.08	16 4 46.31	16 4984
25	8.6	52.7	54.7	56.5	58.5	0.7	a	36 26.37	54 52 " "	I B	37.440	18 36 31.65	15 57 3.83	15 5063
26	8.6	25.0	27.8	29.4	33.6	35.8	b_1 c_2	36 37.93	54 52 " "	II	36.640	18 36 43.21	16 0 2.87	16 4990
27	8.9	5.3	7.5	9.3	11.3	13.3	e	36 39.49	54 52 " "	V	41.615	18 36 44.77	16 1 40.12	16 4991
28	9.1	11.8	13.5	15.5	17.5	19.7	a	49 45.66	56 50 10.0 11.6	I C	38.900	18 49 51.02	17 52 23.28	17 5378
29	8.7	23.8	25.8	27.7	29.8	32.0	a	49 57.91	56 50 " "	III A	39.590	18 50 3.28	18 2 18.79	18 5133
30	8.0	19.2	21.5	23.5	25.3	27.4	e	49 53.46	55 18 10.0 10.3	VII	44.285	18 49 58.73	−16 28 30.46	−16 5083
31	9.2	12.8	15.0	17.0	19.3	21.5	c	53 17.12	56 4 10.0 11.0	III	40.400	18 53 22.43	−17 13 15.64	−17 5401
32	8.8	53.0	55.0	57.4	59.6	1.8	c	55 57.36	56 20 10.0 10.7	III	41.270	18 56 2.67	17 29 32.35	17 5419
33	8.9	29.6	31.8	33.9	36.1	38.5	c	57 33.98	56 20 " "	III B	44.450	18 57 39.28	17 27 19.41	17 5440
34	8.6	49.4	51.6	53.7	56.0	58.2	c	58 53.78	56 20 " "	III B	49.200	18 58 59.07	17 28 50.25	17 5453
35	9.0	59.2	0.9	2.8	4.8	7.0	a	0 32.84	55 46 10.0 10.0	I B	49.310	19 0 38.10	16 54 48.42	16 5148
36	7.5	28.2	30.2	32.0	34.1	36.3	a	1 1.98	55 14 10.0 10.0	I B	49.880	19 1 7.20	16 22 57.68	16 5153
37	8.9	36.2	38.0	40.0	42.0	44.4	a	2 10.17	56 40 10.0 10.7	I	41.340	19 2 15.48	[17 49 31.90]	17 5487
38	9.3	15.0	17.0	19.4	21.5	23.8	c	2 19.34	55 36 10.0 9.7	III	42.850	19 2 24.58	16 45 58.49	16 5163
39	8.3	58.7	0.9	3.0	5.3	7.4	c	3 3.06	56 30 10.0 10.7	III	47.100	19 3 8.35	17 41 23.09	17 5493
40	8.2	6.6	8.8	11.0	13.0	15.3	c	4 10.94	56 30 " "	III	42.775	19 4 16.23	−17 39 59.83	−17 5501
41	9.1	42.5	44.7	46.9	49.0	51.3	c	4 46.88	56 44 10.0 10.6	III	41.080	19 4 52.18	−17 53 27.82	−17 5505
42	8.8	18.7	20.7	22.8	25.1	27.3	c	5 22.92	56 26 10.0 11.0	III	41.980	19 5 28.20	17 35 44.22	17 5510
43	9.0	23.0	24.9	26.9	28.9	31.0	a	7 56.85	55 48 10.0 10.0	I A	39.850	19 8 2.08	17 0 14.25	17 5527
44	8.7	3.9	6.0	8.2	10.4	12.6	c	8 8.22	55 48 " "	III C	41.360	19 8 13.44	16 51 3.37	16 5209
45	8.7	55.4	57.3	59.2	1.0	3.5	a	10 29.15	55 38 10.0 9.9	I B	42.730	19 10 34.36	16 44 39.38	16 5232
46	9.1	21.3	23.2	25.2	27.2	29.5	a	10 55.15	55 38 " "	III B	46.610	19 11 0.36	16 45 55.29	16 5241
47	8.8	54.6	56.7	58.9	1.1	3.3	c	10 58.92	55 38 " "	V (B)	50.080	19 11 4.13	16 47 3.19	16 5242
48	9.4	44.6	46.7	48.7	51.0	53.2	c	11 48.84	55 38 " "	V B	50.730	19 11 54.05	16 47 15.49	16 5252
49	8.9	9.4	11.8	13.6	15.5	17.6	e	12 43.63	55 38 " "	VII C	40.100	19 12 48.82	16 40 39.14	16 5264
50	9.0	50.5	52.7	54.6	56.6	58.6	e	13 24.62	55 38 " "	VII A	44.050	19 13 29.83	−16 51 36.64	−16 5273
51	8.7	30.8	33.0	35.2	37.5	39.6	c	17 35.22	56 54 10.0 11.1	III B	49.165	19 17 40.48	−18 2 47.27	−18 5341
52	9.1	15.8	17.9	20.2	22.2	24.5	c	18 20.12	56 54 " "	III C	46.610	19 18 25.37	17 58 45.70	18 5346
53	8.6	24.2	26.2	28.4	30.8	32.9	c	19 28.50	55 50 10.0 10.4	III	48.820	19 19 33.69	17 1 50.18	17 5621
54	9.0	56.4	58.8	0.5	2.4	4.6	e	19 30.55	55 50 " "	V C	51.010	19 19 35.74	16 56 7.18	17 5622
55	8.6	51.4	53.7	55.8	57.9	0.1	c	20 55.78	55 50 " "	III B	49.865	19 21 0.96	16 58 56.30	17 5633
56	9.2	7.6	9.7	11.8	14.0	16.2	c	23 11.86	56 40 10.5 12.2	III B	42.040	19 23 17.08	17 46 29.34	17 5643
57	8.9	6.7	8.9	11.0	13.3	15.5	c	24 11.08	56 40 " "	III B	40.680	19 24 16.30	17 46 3.03	17 5647
58	8.9	28.9	31.0	33.2	35.4	37.6	c	25 33.22	56 40 " "	III A	42.080	19 25 38.44	17 52 58.49	17 5655
59	9.0	28.4	30.5	32.7	35.0	37.0	c	27 32.72	56 (4) 10.0 11.1	III A	39.815	19 27 37.90	17 16 11.94	17 5665
60	9.0	13.0	15.3	17.4	19.5	21.8	c	28 17.40	56 (4) " "	III B	41.100	19 28 22.56	−17 10 7.55	−17 5671
61	8.9	41.6	43.7	45.8	48.0	50.2	c	28 45.86	56 (4) " "	V	47.200	19 28 51.02	−17 15 19.22	−17 5673
62	8.9	41.2	43.0	45.0	47.0	49.1	a	31 14.92	55 30 10.0 10.5	I	44.085	19 31 20.05	16 40 14.42	16 5377
63	9.0	19.3	21.4	23.6	25.8	27.9	c	31 23.60	55 30 " "	III C	49.370	19 31 28.72	16 35 31.25	16 5379
64	8.7	46.8	49.0	51.1	53.3	55.6	c	31 51.16	55 30 " "	III	45.030	19 31 56.28	16 40 33.78	16 5381
65	8.0	48.3	50.2	52.2	54.2	56.5	a	33 22.21	55 58 10.0 10.6	I	44.010	19 33 27.36	17 8 13.99	17 5699[1]
66	8.3	18.6	20.7	22.8	25.0	27.3	c	33 22.88	55 58 " "	III	43.610	19 33 28.03	−17 8 7.63	−17 5699[2]

Reduction Elements. Zone 169.

1896.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
July 25.3	−0.016	+0.163		−0.008	+0.171	−0.122
25.5	−0.000	+0.179	−0.122			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	β Scorpii pr.		*α* Scorpii		ζ Ophiuchi		Mayer 703		*ν* Ophiuchi		2 H. Scuti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	58 20 11.25		65 0 10.00		49 12 10.00		57 36 10.80		48 36 10.35		53 28 10.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq.	46.050	5 51.69	47.230	6 16.33	41.370	4 24.73	44.995	5 34.13	41.980	4 36.06	42.080	4 37.88
II | Red. to Mer.	.000	1.61	.155	1.54	.350	1.70	.990	1.62	.960	1.70	.035	1.66
VI | Inclination	45.860		.020		.225		.850		.830		41.920	
VII | Refraction	.790	1 30.0	.030	1 59.0	.215	1 4.5	.800	1 28.0	.750	1 3.4	.870	1 15.5
	Bradley 2333		30 Sagittarii		*υ* Sagittarii		*f* Sagittarii		51 Aquilae			
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″			
CIRCLE READING.	62 24 10.00		61 6 10.25		54 58 10.10		58 50 10.30		49 52 10.10			
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″		
I | Microm. Eq.	45.860	5 50.36	43.660	5 8.38	45.030	5 34.58	43.170	4 58.69	41.220	4 21.64		
II | Red. to Mer.	.830	1.56	.645	1.58	.000	1.65	.150	1.60	.200	1.70		
VI | Inclination	.670		.485		44.875		42.960		.050			
VII | Refraction	.660	1 46.2	.475	1 41.3	.825	1 20.0	.965	1 32.8	.040	1 6.7		

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
β Scorpii pr.	15 59 31.05	11	− 0.02	−4.43	58 27 34.6	[4.4]
α Scorpii	16 23 9.93	11	− 0.05	−4.52	65 8 26.9	6.7
ζ Ophiuchi	16 31 33.62	11	+ 0.01	−4.44	49 17 40.9	7.1
Mayer 703	17 49 56.39	11	− 0.02	−4.53	57 43 14.6	6.6
ν Ophiuchi	17 53 26.20	11	+ 0.01	−4.49	48 41 51.5	8.1
2 H. Scuti	18 23 24.65	11	0.00	−4.53	53 34 5.3	7.1
Bradley 2333	18 32 19.95	11	− 0.04	−4.52	62 31 48.1	9.3
30 Sagittarii	18 44 44.15	11	− 0.04	−4.51	61 13 1.5	7.7
υ Sagittarii	19 15 54.86	11	− 0.01	−4.49	55 5 6.3	7.6
λ Ursae Minoris	19 27 3.80	3	+10.97	[−4.50]	309 58 ...	...
f Sagittarii	19 40 26.54	11	− 0.03	−4.54	58 56 43.4	7.2
51 Aquilae	19 45 11.92	11	+ 0.01	−4.48	49 57 40.1	6.5

h		s
18.091	*dt*	−4.498
	Hourly rate	0.0000

Adopted Equator Point ° ′ ″ 38 56 7.39

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
16 1	29.918	75.0	73.2
17 13	29.924	72.9	71.0
18 0	29.932	71.9	70.2
18 46	29.926	70.6	69.1
19 47	29.944	69.2	67.5

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.01	+10.40	+21.88	82.22	15	−0.01	+9.96	− 9.70	82.68	28	−0.02	+9.88	−18.78	85.23
2	0.01	10.25	18.64	78.22	16	0.01	9.96	9.74	82.64	29	0.02	9.89	18.85	85.74
3	0.01	10.20	14.67	78.32	17	0.01	9.96	9.76	82.64	30	0.01	9.78	18.61	80.87
4	0.01	10.14	+10.67	78.24	18	0.01	9.96	9.79	82.81	31	0.01	9.82	19.53	83.18
5	0.02	10.01	− 7.21	82.98	19	0.01	9.96	9.99	82.93	32	0.02	9.83	20.22	84.05
6	0.01	10.00	7.37	82.79	20	0.01	9.94	10.32	82.13	33	0.02	9.82	20.59	83.93
7	0.01	10.00	7.38	82.79	21	0.01	9.94	10.45	82.24	34	0.02	9.81	20.91	84.00
8	0.01	9.96	7.42	81.43	22	0.01	9.95	10.54	82.53	35	0.01	9.77	21.25	82.26
9	0.01	9.92	7.44	81.58	23	0.01	9.92	11.30	81.98	36	0.01	9.73	21.31	80.65
10	0.01	9.94	7.67	80.48	24	0.01	9.80	15.05	79.63	37	0.02	9.83	21.74	85.11
11	0.01	9.93	7.76	80.24	25	0.01	9.79	15.22	79.27	38	0.01	9.75	21.64	81.81
12	0.01	9.90	8.48	79.47	26	0.01	9.79	15.28	79.41	39	0.02	9.81	21.93	84.70
13	0.01	9.99	9.07	83.54	27	−0.01	+9.79	−15.28	79.49	40	−0.02	+9.81	−22.19	84.64
14	0.01	+ 9.97	− 9.35	82.76										

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	"	"		s	s	"	"
41	−0.02	+9.82	−22.36	85.35	54	−0.01	+9.70	−25.68	82.43
42	0.02	9.80	22.47	84.41	55	0.01	9.69	26.03	82.57
43	0.01	9.74	23.02	82.58	56	0.02	9.74	26.59	85.07
44	0.01	9.73	23.04	82.11	57	0.02	9.74	26.82	85.07
45	0.01	9.72	23.58	81.79	58	0.02	9.74	27.14	85.43
46	0.01	9.72	23.67	81.87	59	0.01	9.69	27.54	83.50
47	0.01	9.72	23.70	81.92	60	0.02	9.68	27.69	83.20
48	0.01	9.72	23.88	81.94	61	0.02	9.68	27.81	83.46
49	0.01	9.70	24.11	81.60	62	0.01	9.64	28.32	81.67
50	0.01	9.72	24.27	82.15	63	0.01	9.63	28.34	81.45
51	0.02	9.78	25.34	85.92	64	0.01	9.63	28.45	81.70
52	0.02	9.77	25.52	85.70	65	0.01	9.66	28.82	83.12
53	−0.01	+9.70	−25.69	82.72	66	−0.01	+9.66	−28.82	83.10

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1896 JULY 31. ZONE 170. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.2	46.5	48.7	50.9	53.1	55.3	c	4 50.90	55 34 10.0 15.0	III 44.620	18 4 55.43	−16 43 58.31	−16 4739
2	9.3	54.2	56.3	58.5	0.5	2.8	c	6 58.46	55 8 10.0 16.6	III 45.820	18 7 2.94	16 18 20.37	16 4756
3	9.3	3.5	5.8	7.8	10.1	12.3	c	10 7.90	54 52 10.0 15.0	III 45.375	18 10 12.35	16 2 9.55	16 4778
4	9.4	13.6	15.9	18.0	20.2	22.4	c	14 18.02	56 0 10.0 16.0	III 43.300	18 14 22.54	17 9 32.31	17 5140
5	.....	30.2	32.2	34.5	36.8	38.9	c	14 34.52	56 0 " "	....	18 14 39.03	17 9 23	17 5142
6	9.2	......	41.8	46.0	47.7	50.3	c_5 d_3	14 37.48	56 0 " "	VI 40.550	18 14 41.99	17 8 41.09	17 5143
7	9.1	21.3	23.6	25.3	27.2	29.2	e	15 55.32	55 50 10.0 16.0	VII 42.510	18 15 59.82	16 59 18.29	17 5157
8	8.6	59.8	1.7	3.6	5.6	7.8	a	3 33.62	55 54 10.0 17.0	I 41.255	19 3 37.87	17 2 39.86	17 5495
9	9.1	59.2	1.3	3.6	5.8	7.9	c	4 3.56	55 36 10.0 17.2	III A 42.185	19 4 7.79	16 48 13.44	16 5178
10	9.0	17.7	19.8	21.9	24.1	26.3	c	4 21.96	55 36 " "	III 42.160	19 4 26.19	−16 44 57.59	−16 5179
11	8.9	55.7	58.0	0.1	2.3	4.5	c	5 0.12	55 36 " "	III C 46.875	19 5 4.34	−16 40 2.05	−16 5186
12	8.3	16.0	18.2	20.5	22.6	24.8	c	6 20.42′	55 26 10.0 17.0	III 44.520	19 6 24.63	16 35 41.85	16 5196
13	8.0	54.7	56.8	59.0	1.3	3.5	c	8 59.06	56 22 10.0 18.0	III 42.510	19 9 3.31	17 31 5.94	17 5535
14	9.0	38.3	40.2	42.2	44.2	46.5	a	10 12.28	56 22 " "	I 45.070	19 10 16.53	17 31 53.45	17 5543
15	9.2	14.5	16.5	18.5	20.4	22.7	a	10 48.57	56 40 10.0 18.2	I 45.130	19 10 52.84	17 49 55.46	17 5552
16	8.9	4.9	6.7	8.6	10.7	12.9	a	11 38.84	56 54 10.0 18.0	I B 42.910	19 11 43.12	17 59 59.51	18 5290
17	8.6	34.0	35.6	39.8	41.9	44.3	b_2 c_3	11 44.22	56 54 " "	III A 41.130	19 11 48.50	18 5 55.78	18 5291
18	9.2	1.7	3.8	6.1	10.3	11.7	c_3 d_2	12 1.67	55 22 10.0 17.2	VI 47.065	19 12 5.85	16 32 30.93	16 5255
19	8.8	23.2	25.0	27.0	29.0	31.2	a	24 57.06	56 20 10.0 17.4	I C 48.700	19 25 1.22	17 24 33.63	17 5649
20	8.9	1.1	3.3	5.4	7.7	9.8	c	25 5.46	56 20 " "	III B 44.975	19 25 9.64	−17 26 35.62	−17 5651
21	9.1	43.7	45.8	48.2	50.1	52.3	c	25 48.02	56 20 " "	III A 43.030	19 25 52.19	−17 32 27.04	−17 5657
22	8.9	17.4	19.7	21.6	23.4	25.5	[illegible]	25 51.44	56 20 " "	V B 44.450	19 25 55.60	17 26 26.69	17 5658
23	9.4	58.3	0.4	2.7	4.8	7.0	c	28 2.64	56 44 10.0 18.0	III 42.980	19 28 6.82	17 53 11.81	17 5669
24	8.7	47.3	49.5	51.7	54.0	56.1	c	30 51.72	56 24 10.0 18.2	III 43.480	19 30 55.87	17 33 19.85	17 5685
25	8.8	24.5	26.6	28.7	30.9	33.1	c	31 28.76	56 12 10.0 17.6	III A 40.320	19 31 32.90	17 23 33.49	17 5690
26	8.7	49.3	51.5	53.6	55.7	57.9	c	32 53.60	56 12 " "	III B 46.975	19 32 57.72	17 19 12.02	17 5696
27	9.4	31.9	33.9	35.9	37.8	40.1	a	34 5.88	56 12 " "	III C 49.860	19 34 10.00	17 16 54.80	17 5703^1
28	9.2	3.7	5.5	7.8	9.9	11.9	c	34 7.76	56 12 " "	V C 49.380	19 34 11.88	−17 16 46.45	−17 5703^2

Reduction Elements. Zone 170.

1896.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
July 31.4....	−0.037	+0.157	−0.170	−0.025	+0.180	−0.142
31.5....	−0.013	+0.202	−0.114			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Mayer 703		ν Ophiuchi		2 H. Scuti		Bradley 2333		Piazzi XVIII. 260		λ Aquilae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	57 36 13.50		48 36 13.00		53 28 12.50		62 24 12.45		54 16 13.35		43 52 13.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	47.605	6 23.87	44.460	5 23.90	44.655	5 27.62	48.305	6 37.23	43.825	5 11.04	46.640	6 5.42
II Red. to Mer.	.570	1.62	.440	1.70	.655	1.66	.250	1.56	.785	1.66	.615	1.76
VI Inclination	.440		.310		.490		.140		.610		.465	
VII Refraction	.395	1 28.2	.290	1 3.5	.475	1 15.6	.100	1 47.0	.595	1 17.9	.440	54.0

	υ Sagittarii		f Sagittarii	
	° ′ ″		° ′ ″	
CIRCLE READING.	54 58 13.45		58 50 13.50	
	r	′ ″	r	′ ″
I Microm. Eq.	47.440	6 20.77	45.680	5 46.62
II Red. to Mer.	.425	1.65	.600	1.60
VI Inclination	.275		.510	
VII Refraction	.225	1 20.1	.450	1 32.9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Mayer 703	17 49 57.22	11	— 0.05	—5.38	57 44 7.2	59.3
ν Ophiuchi	17 53 27.07	11	— 0.01	—5.36	48 42 42.1	59.0
δ Ursae Minoris	18 5 54.91	3	+ 3.41	[—5.06]	312 20	....
2 H. Scuti	18 23 25.62	11	- 0.03	—5.51	53 34 57.4	59.3
Bradley 2333	18 32 20.97	11	— 0.07	—5.55	62 32 38.2	57.7
Piazzi XVIII. 260	18 55 46.45	11	— 0.04	—5.47	54 22 43.9	58.6
λ Aquilae	19 0 53.05	11	+ 0.01	—5.52	43 59 14.4	57.9
υ Sagittarii	19 15 55.91	11	— 0.04	—5.52	55 5 56.0	57.3
λ Ursae Minoris	19 27 2.76	2	+11.21	[—6.69]	309 58	....
f Sagittarii	19 40 27.49	11	— 0.06	—5.46	58 57 34.6	58.4

h 18.162 . . . . *dt* . . . . s —5.450
Hourly rate . . . . —0.0397

Adopted Equator Point . . . . ° ′ ″ 38 56 58.44

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 51	29.930	71.4	69.1
18 50	29.950	69.8	68.8
19 42	29.958	68.8	67.5

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″
1	—0.04	+10.02	—7.20	81.64	15	—0.05	+9.81	—23.72	85.27
2	0.04	9.97	7.66	80.35	16	0.05	9.82	23.94	85.84
3	0.04	9.94	8.39	79.58	17	0.05	9.82	23.95	86.14
4	0.04	10.01	9.73	82.98	18	0.04	9.71	23.82	81.28
5	0.04	10.00	. . . . .	. . . . .	19	0.05	9.71	26.92	83.95
6	0.04	10.00	9.79	82.95	20	0.04	9.72	26.94	84.12
7	0.04	9.99	10.09	82.43	21	0.05	9.72	27.11	84.43
8	0.04	9.78	21.92	82.78	22	0.05	9.71	27.12	84.12
9	0.04	9.76	22.00	82.02	23	0.05	9.73	27.66	85.55
10	0.04	9.76	22.07	81.87	24	0.05	9.70	28.24	84.49
11	0.04	9.75	22.19	81.62	25	0.04	9.68	28.36	84.00
12	0.04	9.74	22.50	81.41	26	0.04	9.67	28.66	83.79
13	0.05	9.79	23.26	84.29	27	0.04	9.67	28.91	83.66
14	—0.05	+ 9.79	—23.54	84.31	28	—0.04	+9.67	—28.91	83.64

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1896 SEPTEMBER 1. ZONE 171. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.2	39.0	41.2	43.5	45.6	47.7	c	14 43.40	56 0 10.0	9.1	III	43.150	18 14 38.92	—17 9 22.29	—17 5142
2	8.2	32.5	34.6	36.7	38.9	41.2	c	1 36.78	52 40 10.0	8.6	III	43.260	19 1 31.72	13 49 4.04	13 5231
3	9.3	54.0	55.7	57.7	59.7	2.1	a	3 27.38	53 14 10.0	8.3	I	48.115	19 3 22.34	14 24 36.69	14 5301
4	9.2	27.0	29.0	31.3	33.4	35.6	c	3 31.26	52 50 10.0	9.5	III A	47.820	19 3 26.20	14 3 47.21	14 5302
5	8.9	30.9	33.1	35.3	37.4	39.6	c	4 35.26	52 50 “	“	III	43.165	19 4 30.19	—13 59 2.35	—14 5311

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
6	9.2	28.3	30.1	32.0	34.0	36.2	a	6 1.59	52 50 10.0	9.5	I B	41.145	19 5 56.50	−13 55 8.21	−13 5264
7	9.4	35.0	37.1	39.3	41.4	43.6	c	6 39.28	54 8 10.0	9.2	III A	41.005	19 6 34.27	15 19 38.81	15 5269
8	7.8	13.7	15.6	17.9	20.0	22.2	c	7 17.88	54 8 "	"	III C	44.525	19 7 12.85	15 11 5.02	15 5274
9	8.6	22.0	24.2	26.2	28.5	30.6	c	8 26.30	53 48 10.0	8.3	III	47.620	19 8 21.25	14 58 28.71	15 5282
10	9.3	24.4	26.3	28.4	30.3	32.5	a	9 57.98	53 48 "	"	I B	40.880	19 9 52.91	−14 53 3.98	−14 5351
11	7.5	1.9	4.0	6.2	8.4	10.5	c	10 6.20	53 48 "	"	III A	44.445	19 10 1.14	−15 0 42.68	−15 5290
12	8.0	27.2	29.1	31.1	33.1	35.3	a	12 0.94	54 56 10.0	8.5	I A	44.390	19 11 55.95	16 8 42.89	16 5253
13	8.6	......	54.6	56.7	58.8	1.1	a	12 26.62	54 56 "	"	I (A)	42.360	19 12 21.62	16 8 3.83	16 5256
14	9.0	34.7	36.8	39.1	41.2	43.4	c	12 39.04	54 56 "	"	III B	39.590	19 12 34.03	16 0 43.16	16 5260
15	7.8	26.6	28.6	30.9	33.0	35.3	c	13 30.88	54 56 "	"	III	44.165	19 13 25.87	16 5 24.34	16 5272
16	9.3	35.3	37.4	39.6	41.7	43.9	c	16 39.58	53 14 10.0	8.4	III B	41.360	19 16 34.42	14 19 11.82	14 5406
17	8.7	1.9	3.9	6.2	8.3	10.6	c	17 6.18	53 14 "	"	III B	40.425	19 17 1.02	14 18 53.75	14 5409
18	9.0	22.6	24.7	26.9	31.1	32.7	c_3 d_2	17 22.60	53 14 "	"	V A	45.310	19 17 17.46	14 26 57.48	14 5413
19	9.0	21.9	23.9	26.1	28.3	30.6	c	20 26.16	52 44 10.0	7.5	III	43.260	19 20 20.96	13 52 59.30	13 5352
20	9.2	43.6	45.6	48.0	50.0	52.2	c	26 47.88	54 4 10.0	7.6	III B	39.070	19 26 42.70	−15 8 27.32	−15 5380
21	8.0	35.4	37.7	39.8	42.0	44.2	c	27 39.82	54 4 "	"	III	43.880	19 27 34.64	−15 13 12.97	−15 5386
22	8.3	39.7	41.9	43.9	46.1	48.4	c	28 44.00	54 4 "	"	III A	47.410	19 28 38.82	15 17 35.76	15 5397
23	7.3	3.6	5.5	7.4	9.4	11.6	a	31 37.07	53 30 10.0	8.5	I	44.110	19 31 31.82	14 39 14.19	14 5475
24	9.5	51.1	53.2	55.4	57.6	59.7	c	31 55.40	53 30 "	"	III A	41.455	19 31 50.15	14 41 39.78	14 5476
25	8.6	24.6	27.0	28.8	30.7	32.7	e	31 59.10	53 30 "	"	VII	38.600	19 31 53.85	14 37 31.78	14 5478
26	8.0	28.0	30.1	32.4	34.6	36.8	c	33 32.38	56 8 11.5	10.5	V C	35.625	19 33 27.27	17 8 16.10	17 5699[1]
27	8.0	58.9	1.2	3.2	5.1	7.1	e	33 33.06	56 8 "	"	VII(C)	35.200	19 33 27.95	−17 8 8.62	−17 5699[2]

Reduction Elements. Zone 171.

	OBSERVED.			ADOPTED.		
1896.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
September 1.3....	−0.055	+0.189	−0.247	−0.055	+0.189	−0.247

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		μ Sagittarii		Bradley 2329		30 Sagittarii		Piazzi XVIII. 260		*f* Sagittarii		51 Aquilae	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	59 54 9.40		49 54 9.60		61 6 9.55		54 16 9.30		58 50 9.45		49 52 9.00	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	47.955	6 30.46	44.040	5 15.25	46.565	6 4.29	44.155	5 17.96	46.075	5 54.83	44.115	5 17.06
II	Red. to Mer......	.840	1.59	43.995	1.70	.530	1.58	.130	1.66	.055	1.60	.080	1.70
VI	Inclination	.800		.850		.420		.000		45.905		43.945	
VII	Refraction	.790	1 37.3	.810	1 7.1	.410	1 42.4	43.980	1 18.7	.915	1 33.9	.930	1 7.4

		Mayer 811		Lalande 38458	
		° ′ ″		° ′ ″	
	CIRCLE READING.	61 42 8.60		45 54 9.10	
		r	′ ″	r	′ ″
I	Microm. Eq......	47.265	6 17.19	44.650	5 27.60
II	Red. to Mer......	.250	1.57	.630	1.73
VI	Inclination	.060		.510	
VII	Refraction	.040	1 45.6	.480	58.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Ursae Minoris	18 5 52.01	6	+4.32	[−14.62]	312 20	...
μ Sagittarii	18 7 51.02	11	−0.19	−14.52	60 2 18.7	3.4
Bradley 2329	18 29 33.93	11	−0.12	−14.67	50 0 33.7	3.7
30 Sagittarii	18 44 54.21	11	−0.20	−14.66	61 13 57.8	2.8
Piazzi XVIII. 260..	18 55 55.59	11	−0.15	−14.69	54 22 47.6	2.9
f Sagittarii	19 40 36.76	11	−0.18	−14.69	58 57 39.8	3.3
51 Aquilae	19 45 22.19	11	0.12	−14.69	49 58 35.2	2.7
Mayer 811	19 57 53.81	11	−0.20	−14.76	61 50 13.0	3.2
Lalande 38458.....	20 2 52.25	11	−0.10	−14.79	46 0 37.2	2.8

h			s
18.575	............*dt*	....	−14.635
		Hourly rate	− 0.0754
			° ′ ″
		Adopted Equator Point	38 57 3.10

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
18 8	30.046	68.8	67.0
18 57	30.064	67.0	65.4
20 2	30.070	64.4	63.0

Notes.

12, 13. Double, observed s. p.

15. Reddish.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	"	"		s	s	"	"
1	−0.16	+10.28	− 9.41	83.64	15	−0.15	+9.82	−23.66	80.76
2	0.14	9.75	20.18	74.28	16	0.15	9.68	23.89	75.74
3	0.15	9.78	20.79	75.89	17	0.15	9.68	24.01	75.72
4	0.14	9.75	20.71	74.94	18	0.14	9.69	24.09	76.08
5	0.14	9.74	20.94	74.73	19	0.14	9.63	24.65	74.56
6	0.14	9.72	21.26	74.56	20	0.15	9.67	26.45	78.11
7	0.15	9.82	21.82	78.49	21	0.15	9.67	26.66	78.31
8	0.15	9.80	21.94	78.07	22	0.15	9.67	26.93	78.52
9	0.15	9.78	22.15	77.48	23	0.15	9.61	27.42	76.74
10	0.15	9.76	22.46	77.23	24	0.15	9.61	27.48	76.84
11	0.15	9.77	22.56	77.59	25	0.15	9.61	27.47	76.66
12	0.15	9.84	23.33	80.91	26	0.16	9.76	28.49	84.10
13	0.15	9.83	23.41	80.87	27	−0.16	+9.76	−28.49	84.08
14	−0.15	+ 9.82	−23.43	80.52					

a = Instrumental corrections.
A = *α* to 1900.0
D = Z. D. S. to 1900.0

1896 SEPTEMBER 7. ZONE 172. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.9	46.5	48.4	50.3	52.4	54.5	a	10 20.30	55 38 10.0 9.0	I	45.230	19 10 12.12	−16 47 47.54	−16 5225
2	8.8	1.9	3.6	5.6	7.6	9.8	a	11 35.49	55 4 10.0 9.8	I	45.140	19 11 27.28	16 13 44.37	16 5247
3	8.6	14.3	16.3	18.2	20.2	22.4	a	11 48.08	55 4 " "	III	49.100	19 11 39.87	16 15 1.69	16 5249
4	8.8	3.3	5.1	7.1	9.1	11.2	a	12 37.06	55 42 10.0 10.0	I	46.285	19 12 28.87	16 52 7.94	16 5259
5	8.7	52.8	54.9	57.0	59.1	1.4	c	12 57.04	53 22 10.0 8.5	III	44.910	19 12 48.70	14 31 35.98	14 5378
6	8.9	13.7	15.9	18.2	20.3	22.5	c	14 18.12	53 22 " "	III B	40.660	19 14 9.77	14 27 0.53	14 5389
7	8.8	4.6	6.7	8.9	11.0	13.3	c	16 8.90	54 36 10.0 9.5	III	44.010	19 16 0.62	15 45 20.71	15 5325
8	9.0	22.7.	24.8	26.9	29.1	31.4	c	17 26.98	54 36 " "	III	47.200	19 17 18.69	15 46 22.52	15 5332
9	9.1	36.7	39.2	41.3	43.4	45.6	c	17 41.24	54 36 " "	V A	43.410	19 17 32.95	15 48 26.18	15 5334
10	9.1	7.7	9.5	11.6	13.6	15.7	a	24 41.43	55 12 10.0 10.2	I	44.720	19 24 33.12	−16 21 33.87	−16 5335
11	8.7	12.8	15.0	17.2	19.4	21.6	c	25 17.20	55 48 10.0 9.2	III	45.125	19 25 8.93	−16 57 43.98	−17 5650
12	8.5	18.0	21.1	22.2	24.5	26.7	c	26 22.30	55 48 " "	III A	46.460	19 26 14.02	17 1 24.65	17 5659
13	8.2	42.7	44.4	46.4	48.4	50.6	a	28 16.27	54 52 10.0 9.2	I	47.405	19 28 7.91	16 2 23.17	16 5356
14	9.3	11.5	13.4	15.4	17.2	19.5	a	28 45.17	54 52 " "	I	48.695	19 28 36.81	16 2 47.82	16 5361
15	9.3	54.1	56.4	58.4	0.4	2.2	e	28 28.55	54 6 10.0 9.4	V	46.340	19 28 20.14	15 16 3.26	15 5392
16	9.3	44.7	46.5	48.5	50.5	52.6	a	34 18.52	56 8 10.0 10.2	I	42.680	19 34 10.19	17 16 55.17	17 5703^1
17	9.1	15.9	18.0	20.2	22.5	24.6	c	34 20.24	56 8 " "	III	42.260	19 34 11.91	17 16 48.46	17 5703^2
18	9.1	7.0	9.2	11.2	13.6	15.8	c	15 11.36	56 10 10.0 8.9	III	44.420	20 15 2.71	17 19 21.06	17 5945
19	......	13.8	15.9	18.1	20.4	22.5	c	23 18.15	57 0 10.0 10.0	II	42.250	20 23 9.48	18 8 40.34	18 5689
20	9.3	0.7	2.9	5.0	7.2	9.2	c	37 5.00	53 0 10.0 8.5	III	45.300	20 36 56.04	−14 9 25.37	−14 5826
21	9.0	46.4	48.8	51.0	53.1	55.2	c	11 50.90	55 14 10.0 8.9	III	45.830	21 11 41.76	−16 23 36.42	−16 5831

Reduction Elements. Zone 172.

	OBSERVED.			ADOPTED.		
1896.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
September 7.3....	−0.011	+0.262	−0.104	−0.011	+0.262	−0.104

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi XVIII. 260		λ Aquilae		π Sagittarii		20 Aquilae		ε Capricorni		γ Capricorni	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 16 9.20		43 52 9.45		60 0 9.70		46 58 9.55		58 46 9.55		55 58 9.35	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.180	5 18.19	46.895	6 11.02	48.090	6 33.48	41.820	4 34.17	43.130	4 58.00	43.580	5 6.65
II Red. to Mer.	.145	1.66	.885	1.75	.075	1.59	.890	1.72	.065	1.60	.575	1.64
VI Inclination	43.995		.790		47.930		.690		42.970		.390	
VII Refraction	.990	1 18.2	.760	54.2	.920	1 37.4	.730	1 0.3	.935	1 30.0	.360	1 23.6

	λ Capricorni		ι Aquilae	
	° ′ ″		° ′ ″	
CIRCLE READING.	50 42 9.70		53 12 9.10	
	r	′ ″	r	′ ″
I Microm. Eq.	40.480	4 7.08	45.515	5 43.75
II Red. to Mer.	.395	1.69	.465	1.67
VI Inclination	.290		.350	
VII Refraction	.310	1 9.0	.310	1 15.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
51 Cephei S. P	18 52 25.69	8	−4.67	[−18.18]	306 10	....
Piazzi XVIII. 260	18 55 58.82	11	+0.06	−18.20	54 22 47.2	62.7
λ Aquilae	19 1 5.33	11	+0.11	−18.16	43 59 16.4	61.9
π Sagittarii	19 3 56.94	11	+0.03	−18.29	60 8 22.2	61.6
20 Aquilae	19 7 23.83	11	+0.09	−18.08	47 3 45.7	61.4
ε Capricorni	21 31 38.15	11	+0.04	−18.31	58 52 39.2	58.5
γ Capricorni	21 34 42.26	11	+0.05	−18.21	56 4 41.2	61.4
λ Capricorni	21 41 18.59	11	+0.08	−18.22	50 47 27.5	60.3
ι Aquarii	22 1 11.76	11	+0.06	−18.31	53 19 10.1	61.2

h 19.035	*dt*	s −18.182
	Hourly rate	− 0.0300
	Adopted Equator Point	° ′ ″ 38 57 1.12

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
18 58	29.870	67.5	65.4
20 0	29.876	66.7	65.0
21 0	29.880	65.0	64.1
22 30	29.888	63.9	63.2

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″
1	+0.05	+9.96	−23.29	82.28	12	+0.05	+9.86	−27.07	83.00
2	0.06	9.92	23.42	80.56	13	0.06	9.78	27.22	80.02
3	0.06	9.92	23.48	80.67	14	0.06	9.78	27.34	80.06
4	0.05	9.95	23.85	82.51	15	0.06	9.73	27.04	77.80
5	0.06	9.79	23.22	75.70	16	0.05	9.82	28.90	83.83
6	0.06	9.78	23.53	75.49	17	0.05	9.82	28.89	83.81
7	0.06	9.85	24.34	79.20	18	0.05	9.52	37.27	84.04
8	0.06	9.84	24.64	79.23	19	0.05	9.50	38.97	86.72
9	0.06	9.84	24.73	79.34	20	0.07	9.20	40.49	74.87
10	0.05	9.83	26.50	80.98	21	+0.05	+9.06	−46.28	81.36
11	+0.05	+9.87	−26.81	82.81					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1896 OCTOBER 22. ZONE 173. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.0	7.7	10.0	12.1	14.2	16.5	c	47 12.10	56 4 6.4	5.1	III	42.405	22 46 43.46	−17 12 22.09	−17 6611
2	9.1	55.7	57.9	0.2	2.3	4.4	c	5 0.10	54 44 5.6	3.5	III	41.275	0 4 30.80	15 51 56.32	16 12
3	9.4	20.0	22.2	24.6	26.6	28.7	c	10 24.42	52 28 8.8	6.4	III	42.600	0 9 55.13	13 36 19.09	13 32
4	9.1	59.1	1.4	3.4	5.7	7.9	c	47 3.50	54 16 6.7	3.9	III	46.425	0 46 33.91	15 25 38.06	15 156
5	6.5	27.0	29.1	31.3	33.6	35.8	c	4 31.36	57 6 4.3	3.9	III	43.970	2 4 1.39	−18 15 10.04	−18 374

Reduction Elements. Zone 173.

	OBSERVED.			ADOPTED.		
1896.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 22.3....	+0.016	+0.307	−0.254	+0.016	+0.307	−0.254

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ϑ Aquarii		47 Aquarii		*h* Aquarii		c^2 Aquarii		9 Ceti		θ Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ″		° ′ ″	
CIRCLE READING.	47 8 6.25		60 56 7.50		47 6 8.40		60 34 5.90		51 38 5.15		47 34 2.80	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.980	5 34.92	46.405	6 1.23	42.295	4 42.79		5 2.42	41.685	4 31.40	42.075	4 37.85
II Red. to Mer......	.940	1.72	.390	1.58	.280	1.72	43.330	1.58	.700	1.68	.020	1.71
VI Inclination	.850		.250		.190		.220	0.56	.585		41.905	
VII Refraction.......	.810	1 2.6	.245	1 44.4	.160	1 2.6	.215	1 42.8	.580	1 13.5	.895	1 3.7

	67 Ceti		κ Fornacis	
	° ′ ″		° ″	
CIRCLE READING.	45 44 5.25		63 6 5.45	
	r	′ ″	r	′ ″
I Microm. Eq......	44.810	5 30.33	45.880	5 50.67
II Red. to Mer......	.785	1.73	.810	1.56
VI Inclination	.635		.720	
VII Refraction.......	.610	59.8	.675	1 54.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ϑ Aquarii...........	22 12 1.83	11	+ 0.04	−37.24	47 14 45.5	60.5
47 Aquarii...........	22 16 33.63	11	− 0.06	−37.29	61 3 54.7	59.9
h Aquarii...........	23 0 25.57	11	+ 0.04	−37.18	47 11 55.5	59.6
c^2 Aquarii...........	23 4 35.75	11	− 0.06	−37.26	60 40 53.3	59.3
9 Ceti..............	0 18 13.49	11	+ 0.01	−37.13	51 43 51.7	59.8
ϑ Ceti..............	1 19 30.91	11	+ 0.04	−37.15	47 39 46.1	61.4
α Ursae Minoris.....	1 22 13.34	6	+18.87	[−37.18]	310 10	....
67 Ceti..............	2 12 29.21	11	+ 0.05	−37.22	45 50 37.1	59.6
κ Fornacis..........	2 18 28.70	11	− 0.08	−37.30	63 13 52.4	60.3

h		s
22.632..........	*dt*	−37.242
	Hourly rate	+ 0.0145
		° ′ ″
	Adopted Equator Point..........	38 57 0.05

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
22 6	29.824	51.2	49.2
22 55	29.814	50.0	48.4
0 14	29.800	48.9	47.2
1 0	29.783	48.3	46.8
2 25	29.764	47.9	46.2

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	−0.03	+8.63	−57.22	86.28
2	0.02	7.94	56.10	82.26
3	0.00	7.93	55.34	75.79
4	0.02	7.64	52.60	80.98
5	−0.04	+7.06	−41.36	90.01

a = Instrumental corrections.
A = *α* to 1900.0
D = Z. D. S. to 1900.0

1896 OCTOBER 26. ZONE 174. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°	
1	8.2	15.1	17.3	19.6	21.5	23.7	c	7 19.44	52 46	7.3	5.2	V B	50.080	3 6 47.45	−13 53 56.80	−14	617
2	8.9	56.6	58.7	1.0	3.0	5.2	c	42 0.90	54 18	4.6	3.2	III	44.730	3 41 28.77	15 27 37.03	15	651
3.	7.0	35.9	38.1	40.3	42.4	44.7	c	2 40.28	57 10	7.4	7.7	III	42.395	4 2 7.90	18 19 10.69	18	752
4	9.1	12.0	13.9	15.8	17.7	20.1	a	18 45.42	52 50	9.8	9.0	I	46.920	5 18 13.58	14 0 45.07	14	1115
5	9.4	19.6	21.7	23.8	25.9	28.2	c	19 23.84	52 50	"	"	V B	49.890	5 18 52.00	13 58 31.26	14	1118
6	8.6	19.8	21.9	24.1	26.3	28.4	c	43 24.10	54 18	4.1	3.2	III	48.040	5 42 52.25	15 29 13.59	15	1167
7	9.3	44.1	46.3	48.5	50.7	52.8	c	7 48.48	54 2	6.8	4.4	III	45.720	6 7 16 79	15 12 37.03	15	1305
8	8.7	38.5	40.5	42.8	44.9	47.0	c	18 42.74	54 6	7.1	5.5	III	41.300	6 18 11.11	−15 15 16.10	−15	1363

Reduction Elements. Zone 174.

1896.	Observed. *c*	Observed. *b*	Observed. *a*	Adopted. *c*	Adopted. *b*	Adopted. *a*
	s	s	s	s	s	s
October 26.3....	+0.033	−0.293	−0.110	+0.033	−0.293	−0.110

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	r^3 Eridani		ε Eridani		γ Eridani		o^1 Eridani		β Orionis		α Leporis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	62 52 5.55		48 38 1.65		52 38 3.25		45 56 5.45		47 10 7.25		56 44 5.80	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	41.580	4 28.79	46.515	6 3.19	44.840	5 30.79	46.370	5 59.96	42.540	4 46.96	42.835	4 52.08
II Red. to Mer......	.560	1.56	.480	1.70	.775	1.67	.320	1.73	.490	1.72	.790	1.63
VI Inclination	.450		.360		.650		.175		.405		.615	
VII Refraction.......	.415	1 53.5	.340	1 6.3	.670	1 16.5	.160	1 0.5	.360	1 3.1	.625	1 29.0

	ξ^2 Canis Majoris		α Canis Majoris	
	° ′ ″		° ′ ″	
CIRCLE READING.	61 42 4.55		55 24 4.00	
	r	′ ″	r	′ ″
I Microm. Eq......	45.560	5 44.94	45.220	5 37.90
II Red. to Mer......	.535	1.57	.160	1.65
VI Inclination	.390		.030	
VII Refraction.......	.405	1 48.9	.010	1 25.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
r^3 Eridani.........	2 58 31.71	11	+0.08	−39.21	62 58 29.4	59.7
ε Eridani...........	3 28 45.00	11	+0.14	−39.17	48 45 12.8	61.0
γ Eridani...........	3 53 53.80	11	+0.13	−39.23	52 44 52.2	61.0
o^1 Eridani...........	4 7 30.46	11	+0.16	−39.17	46 3 7.6	59.4
β Orionis...........	5 10 15.26	11	+0.15	−39.16	47 15 59.0	60.1
α Leporis...........	5 28 51.31	11	+0.11	−39.21	56 50 28.5	60.3
δ Ursae Minoris S. P.	6 6 2.34	5	−4.96	[−39.15]	305 34	....
ξ^2 Canis Majoris.....	6 31 24.10	11	+0.08	−39.13	61 49 40.0	60.0
α Canis Majoris.....	6 41 16.29	11	+0.11	−39.14	55 31 8.7	58.6

h 3.622...........*dt*..................... s −39.195

Hourly rate .... + 0.0149

Adopted Equator Point.......... 38° 57′ 0.01″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 2	29.922	49.8	48.6
4 14	29.928	48.8	47.7
5 25	29.926	48.8	47.5
6 41	29.939	46.4	45.4

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	+0.13	+7.08	−28.56	76.70
2	0.12	6.94	20.02	81.23
3	0.10	6.71	−14.41	90.43
4	0.12	7.21	+ 5.89	77.16
5	0.12	7.21	6.05	77.06
6	0.12	7.19	13.05	81.51
7	0.12	7.34	19.73	80.80
8	+0.12	+7.40	+22.69	80.98

a = Instrumental corrections.
A = *α* to 1900.0
D = Z. D. S. to 1900.0

1896 DECEMBER 16. ZONE 175. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.6	51.6	53.6	55.8	57.9	0.1	c	56 55.80	54 6 4.7	2.9	III	41.700	23 56 59.96	−15 13 55.83	15 6531

Reduction Elements. Zone 175.

	OBSERVED.			ADOPTED.		
1896.	c	b	a	c	b	a
	s	s	s	s	s	s
December 16.4....	+0.083	+0.872	+0.202	+0.083	+0.872	+0.202

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		Mayer 986		7 Ceti		ι Ceti		9 Ceti	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	49 24 2.95		58 20 7.40		48 14 3.10		51 38 3.50	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	42.450	4 45.71	44.905	5 32.52		5 30.71	42.050	4 37.94
II	Red. to Mer	.440	1.70	.910	1.6		1.71	.055	1.68
VI	Inclination	.345		.750		44.750	1.41	41.920	
VII	Refraction.......	.300	1 9.1	.735	1 36.2	.710	1 6.5	.890	1 15.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Mayer 986	23 45 0.76	11	+ 0.82	−5.14	49 29 59.5	2.6
7 Ceti	0 9 29.75	11	+ 0.76	−5.12	58 27 17.7	2.3
ι Ceti	0 14 15.85	11	+ 0.82	−5.08	48 20 43.4	2.9
9 Ceti	0 17 40.26	11	+ 0.80	−5.12	51 43 58.1	1.1
α Ursae Minoris.....	1 21 13.27	6	+22.78	[−5.11]	310 10	...

	h		s
	0.110........	..*dt*........................	−5.115
		Hourly rate	0.0000
			° ′ ″
		Adopted Equator Point.	38 57 2.22

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
23 46	29.689	37.5	37.2
0 53	29.724	35.5	35.1
2 59	29.740	33.7	33.3

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	+0.79	+8.49	−61.44	81.87

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1897 JANUARY 8. ZONE 176. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	......	50.1	52.2	54.4	56.5	58.6	c	40 54.36	55 24 10.0 28.4	III	46.080	6 40 44.65	−16 34 41.35	−16 1591
[illegible]	8.7	11.7	13.8	16.1	18.2	20.5	c	49 16.06	55 30 10.0 29.2	III A	46.730	6 49 6.35	16 44 12.00	16 1644
3	8.4	11.0	13.0	15.3	17.4	19.7	c	50 15.28	55 30 " "	III B	47.190	6 50 5.58	16 37 52.16	16 1649
4	9.1	54.4	56.2	58.1	0.2	2.4	a	51 28.02	54 50 10.0 29.6	I	41.810	6 51 18.37	15 59 19.54	15 1563
5	8.8	6.2	8.4	10.7	13.0	15.0	c	52 10.66	56 14 10.0 29.6	III	49.940	6 52 0.89	17 26 1.70	17 1693
6	7.8	47.9	50.1	52.3	54.6	56.8	c	52 52.34	56 14 " "	III	48.810	6 52 42.57	17 25 40.16	17 1699
7	8.9	27.9	30.3	32.3	34.1	36.2	e	53 1.96	56 56 8.5 28.5	VII	45.650	6 52 52.14	18 6 42.61	18 1613
8	8.6	50.5	52.7	54.8	57.0	59.1	c	56 54.82	56 4 10.0 1.3	III	47.015	6 56 45.06	17 15 7.07	17 1729
9	8.6	38.8	41.0	43.1	45.3	47.6	c	57 43.16	56 4 " "	III B	49.400	6 57 33.40	17 12 39.40	17 1735
10	......	39.3	41.3	43.5	45.6	47.8	c	58 43.50	54 52 10.0 29.0	III	43.480	6 58 33.84	−16 1 54.54	−15 1616
11	8.8	28.2	30.4	32.8	35.0	37.2	c	59 32.72	56 8 10.0 29.0	V	48.685	6 59 22.96	−17 19 39.93	−17 1752
12	8.7	15.5	17.9	19.8	21.7	23.7	e	59 49.67	56 8 " "	V	41.315	6 59 39.91	17 17 18.54	17 1756
13	8.5	40.3	42.6	44.5	46.5	48.5	e	0 14.43	56 8 " "	VII B	45.750	7 0 4.67	17 15 31.49	17 1760
14	8.7	48.7	50.9	53.2	55.4	57.6	c	16 53.16	54 58 10.0 28.5	III	46.945	7 16 43.51	16 9 5.63	16 1914
15	8.7	24.9	27.0	29.3	31.5	33.7	c	17 29.28	54 58 " "	III	43.540	7 17 19.64	16 8 0.45	16 1921
16	6.	54.1	56.2	58.4	0.6	2.9	c	17 58.44	54 58 " "	III	41.195	7 17 48.80	16 7 15.58	16 1923
17	9.1	22.5	24.6	26.9	29.0	31.2	c	18 26.84	54 58 " "	V A	42.275	7 18 17.20	−16 10 52.95	−16 1927

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
18	9.0	13.8	15.8	18.0	20.2	22.4	c	20 18.04	56 42 10.0 29.6	III	46.335	7 20 8.27	−17 53 1.21	−17 1960
19	8.3	9.1	11.0	13.0	15.2	17.2	a	21 43.17	56 42 “ “	I A	46.640	7 21 33.40	17 56 21.36	17 1970
20	8.0	46.1	48.3	50.4	52.6	54.9	c	21 50.46	56 42 “ “	III A	43.390	7 21 40.69	−17 55 20.41	−17 1971
21	8.0	10.5	12.5	14.8	16.9	19.1	c	32 14.76	53 2 10.0 29.7	III	47.550	7 32 5.28	−14 13 15.57	−14 2025
22	9.2	52.2	53.9	55.8	57.9	0.0	a	34 25.74	54 58 10.0 29.6	I	47.280	7 34 16.13	16 9 15.55	16 2062
23	9.0	29.3	31.6	33.7	35.9	38.2	c	34 33.74	54 58 “ “	III A	45.970	7 34 24.13	16 12 5.15	16 2063
24	8.8	21.7	23.8	26.1	28.3	30.5	c	37 26.08	53 34 10.0 28.0	III	48.100	7 37 16.58	14 45 28.13	14 2134
25	8.6	6.6	8.4	10.4	12.4	14.6	a	40 40.47	56 16 10.0 0.3	I A	42.435	7 40 30.77	17 29 4.07	17 2133
26	8.8	12.5	14.4	16.4	18.3	20.5	a	41 46.39	56 16 “ “	I B	43.065	7 41 36.70	17 22 47.35	17 2144
27	8.8	42.5	44.5	46.8	48.9	51.2	c	41 46.78	56 16 “ “	III	42.390	7 41 37.09	17 25 49.54	17 2146
28	9.0	47.0	48.9	50.9	52.8	55.0	a	43 20.95	56 38 10.0 0.5	I B	43.770	7 43 11.24	17 45 2.66	17 2160
29	9.2	53.6	55.6	57.5	59.5	1.7	a	44 27.62	56 38 “ “	I B	48.890	7 44 17.91	17 46 41.22	17 2172
30	8.7	22.5	25.3	27.0	31.3	33.4	b_1 c_2	44 35.59	56 38 “ “	II	51.150	7 44 25.88	−17 50 39.09	−17 2173
31	8.6	10.6	12.5	14.5	16.5	18.7	a	45 44.60	56 38 “ “	I	42.830	7 45 34.90	−17 47 58.97	−17 2179
32	7.8	13.7	15.7	17.6	19.5	21.9	a	46 47.76	56 52 10.0 0.5	I B	45.350	7 46 38.05	17 59 34.61	17 2185
33	8.2	53.0	54.8	56.9	58.8	1.0	a	47 27.00	56 52 “ “	I A	45.405	7 47 17.28	18 6 4.93	17 2188
34	8.5	24.7	26.9	29.1	31.3	33.5	c	47 29.10	56 52 “ “	III	42.765	7 47 19.39	18 2 0.31	17 2189
35	8.7	2.4	4.2	6.1	8.1	10.4	a	48 36.19	56 4 10.0 28.2	I	47.150	7 48 26.53	17 15 19.41	17 2205
36	8.9	49.7	51.9	54.0	56.3	58.4	c	48 54.06	55 22 10.0 29.1	III	43.470	7 48 44.46	16 32 8.24	16 2174
37	9.3	9.2	11.3	13.5	15.7	17.8	c	53 13.50	54 46 10.0 28.9	III A	49.010	7 53 3.95	16 1 8.82	15 2151
38	9.3	27.5	29.6	31.8	34.0	36.2	c	54 31.82	54 46 “ “	III B	43.880	7 54 22.27	−15 53 1.72	−15 2165

Reduction Elements. Zone 176.

	OBSERVED.			ADOPTED.		
1897.	c	b	a	c	b	a
	s	s	s	s	s	s
January 8.4..	+0.129	+1.107	+0.463	+0.129	+1.107	+0.463

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	5 Monocerotis		6 Monocerotis		β Canis Majoris		ξ² Canis Majoris		Lalande 14810		ι Navis	
	° ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	45 4 5.15		49 32 4.20		56 44 5.15		61 42 4.15		60 54 4.70		62 50 4.45	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	47.760	6 26.73	42.970	4 55.04	45.245	5 38.46	46.430	6 0.79	44.710	5 29.00	44.235	5 21.90
II Red. to Mer......	.725	1.74	.920	1.70	.170	1.63	.350	1.57	.680	1.58	.235	1.56
VI Inclination	.600		.805		.075		.205		.575		.110	
VII Refraction.......	.525	1 1.3	.785	1 11.6	.045	1 33.0	.210	1 53.3	.600	1 49.9	.105	1 59.4

	20 Navis		Lalande 16304	
	° ′ ″		° ′ ″	
CIRCLE READING.	54 18 4.10		51 6 4.60	
	r	′ ″	r	′ ″
I Microm. Eq......		6 9.21	48.315	6 38.13
II Red. to Mer......	46.840	1.67	.310	1.69
VI Inclination	.680	0.56	.185	
VII Refraction.......	.695	1 25.5	.175	1 16.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Ursae Minoris s. p..	6 5 27.32	5	−6.69	[−16.78]	305 34	...
5 Monocerotis.......	6 10 7.52	11	+1.24	−16.74	45 11 34.9	1.6
6 Monocerotis.......	6 13 2.29	11	+1.22	−16.82	49 38 12.5	0.8
β Canis Majoris.....	6 18 27.53	11	+1.18	−16.82	56 51 18.2	2.7
ξ² Canis Majoris....	6 31 2.18	11	+1.15	−16.87	61 49 59.8	1.5
Lalande 14810.....	7 29 56.43	11	+1.16	−16.89	61 1 25.2	2.0
ι Navis........	8 3 27.16	11	+1.14	−16.85	62 57 27.3	2.5
20 Navis........	8 8 53.68	11	+1.19	−16.92	54 25 41.0	1.7
Lalande 16304 ...	8 13 48.33	11	+1.21	−16.85	51 14 0.6	1.4

h 6.305..........*dt*........................ −16.812 s
Hourly rate............ − 0.0393

Adopted Equator Point.......... 38° 57′ 1.″78

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 27	30.027	29.5	28.6
6 14	30.023	29.0	28.3
7 1	30.017	28.1	27.9
8 5	30.012	26.4	25.4

Note.
Lalande 16304. Images not so steady toward end of zone.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+1.19	+5.93	+12.56	88.55	14	+1.19	+6.01	+21.49	87.28	27	+1.18	+6.00	+27.42	91.71
2	1.19	5.93	14.68	89.08	15	1.19	6.02	21.64	87.24	28	1.18	5.98	27.80	92.85
3	1.19	5.94	14.94	88.74	16	1.19	6.02	21.77	87.20	29	1.18	5.98	28.06	92.96
4	1.19	5.99	15.26	86.66	17	1.19	6.02	21.88	87.40	30	1.18	5.98	28.07	93.18
5	1.18	5.88	15.42	91.43	18	1.18	5.90	22.35	93.15	31	1.18	5.99	28.34	93.02
6	1.18	5.88	15.58	91.41	19	1.18	5.90	22.71	93.35	32	1.18	5.98	28.59	93.71
7	1.18	5.83	15.50	93.80	20	1.18	5.90	22.75	93.28	33	1.18	5.97	28.75	94.12
8	1.18	5.90	16.65	90.82	21	1.20	6.18	25.06	81.43	34	1.18	5.98	28.75	93.86
9	1.18	5.90	16.82	90.68	22	1.19	6.06	25.66	87.38	35	1.18	6.03	28.95	91.14
10	1.19	5.99	17.07	86.80	23	1.19	6.06	25.71	85.57	36	1.19	6.08	28.97	88.74
11	1.18	5.90	17.26	91.08	24	1.20	6.16	26.28	83.08	37	1.19	6.13	29.91	87.10
12	1.18	5.90	17.35	90.93	25	1.18	5.99	27.16	91.90	38	+1.19	+6.14	+30.18	86.68
13	+1.18	+5.90	+17.44	90.84	26	+1.18	+6.00	+27.42	91.54					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1897 FEBRUARY 23. ZONE 177. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	′	″	″		r	h m s	° ′ ″	°
1	9.4	20.8	22.8	24.7	26.6	28.7	a	51 54.48	54	50	6.4	1.8	I	41.705	6 51 18.32	−15 59 18.65	−15 1563
2	8.6	58.3	0.2	2.6	4.8	7.0	c	52 2.58	54	50	“	“	V	44.680	6 51 26.42	16 0 18.24	15 1565
3	9.0	36.3	38.1	40.0	41.9	44.4	a	59 9.90	54	52	6.4	1.4	I	43.510	6 58 33.71	16 1 54.90	15 1616
4	9.0	8.3	10.5	12.7	15.0	17.1	c	59 12.72	54	52	“	“	V	45.110	6 58 36.53	16 2 28.05	15 1618
5	8.3	10.9	12.9	15.1	17.3	19.5	c	50 15.14	56	52	5.5	2.2	III	49.680	7 49 38.75	18 4 12.14	17 2219
6	9.0	41.9	44.0	46.1	48.4	50.6	c	50 46.20	56	52	“	“	III B	45.020	7 50 9.81	17 59 29.21	17 2225
7	9.5	21.8	23.9	26.1	28.2	30.5	c	2 26.10	53	6	5.5	0.5	III	48.860	8 1 49.93	14 17 46.78	14 2368
8	9.2	39.3	41.4	43.5	45.8	47.9	c	9 43.58	56	10	4.5	1.2	III	(49).045	8 9 7.22	17 22 0.68	17 2397
9	9.2	36.3	38.5	40.7	43.0	45.2	c	12 40.74	57	4	4.5	1.2	III	49.810	8 12 4.34	18 16 18.93	18 2248
10	......	44.0	46.2	48.5	50.6	52.9	c	42 48.44	57	12	5.5	1.3	III	46.860	8 42 12.06	−18 23 29.06	−18 2474
11	8.6	50.4	52.5	54.6	56.7	58.9	c	55 54.62	52	48	6.1	1.9	V	47.420	8 55 18.48	−13 59 30.31	−13 2736
12	8.6	15.8	17.9	20.0	22.3	24.5	c	31 20.10	53	2	5.4	0.8	V	50.750	9 30 44.02	14 14 39.31	14 2893
13	.....	2.5	4.7	6.9	9.0	11.2	c	36 6.86	52	40	5.9	1.0	III	50.935	9 35 30.80	−13 52 41.68	−13 2917

Reduction Elements. Zone 177.

	OBSERVED.			ADOPTED.		
1897.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
February 23.5....	+0.030	+0.478	+0.278	+0.030	+0.478	+0.278

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	η Leporis		β Canis Majoris		α Canis Majoris		4 Navis		6 Hydrae		19 Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	53 2 3.45		56 44 2.60		55 24 4.45		53 8 3.85		50 56 4.45		47 0 4.40	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42.240	4 40.94	45.220	5 38.19	45.975	5 52.56	47.440	6 20.73	47.335	6 18.85	46.950	6 11.08
II Red. to Mer......	.190	1.67	.230	1.63	.890	1.65	.430	1.67	.310	1.68	.870	1.72
VI Inclination	.070		.000		.830		.270		.155		.770	
VII Refraction.......	.040	1 18.3	.030	1 30.0	.785	1 25.7	.215	1 19.2	.165	1 13.3	.750	1 3.9

	α Hydrae		μ Hydrae	
	° ′ ″		° ′ ″	
CIRCLE READING.	47 2 4.30		55 8 4.20	
	r	′ ″	r	′ ″
I Microm. Eq......	48.055	6 32.85	46.680	6 6.21
II Red. to Mer......	.050	1.72	.645	1.65
VI Inclination	47.900		.525	
VII Refraction.......	.880	1 4.0	.480	1 25.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
η Leporis	5 52 26.75	11	+0.56	−42.87	53 8 4.4	48.2
δ Ursae Minoris S. P.	6 5 57.44	6	−1.37	[−42.88]	305 34	....
β Canis Majoris	6 18 53.89	11	+0.55	−42.88	56 51 12.4	49.0
α Canis Majoris	6 41 20.78	11	+0.55	−42.88	55 31 24.4	49.2
4 Navis	7 41 56.73	11	+0.56	−42.99	53 15 45.4	49.3
6 Hydrae	8 35 53.28	11	+0.56	−42.91	51 3 38.3	48.9
19 Hydrae	9 4 24.37	11	+0.56	−42.83	47 7 21.1	48.8
α Hydrae	9 23 16.22	11	+0.56	−42.82	47 9 42.9	49.0
μ Hydrae	10 21 51.28	11	+0.55	−42.92	55 15 37.8	48.2

h 6.642	*dt*	s −42.905
	Hourly rate	+ 0.0129

Adopted Equator Point.......... 38° 56′ 48.″82

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 57	29.714	40.0	39.8
7 12	29.710	38.0	37.5
8 30	29.725	36.9	36.4
10 9	29.733	34.9	34.4

Note.

7. Images diffuse; observing difficult.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	+0.55	+6.19	+ 6.88	83.91
2	0.55	6.19	6.90	83.97
3	0.55	6.16	8.54	84.08
4	0.55	6.16	8.53	84.10
5	0.55	5.95	19.29	90.97
6	0.55	5.95	19.43	90.70
7	0.56	6.16	22.34	79.14
8	0.55	5.98	23.35	88.65
9	0.55	5.93	23.82	91.75
10	0.55	5.95	29.45	92.26
11	0.56	6.18	32.03	78.47
12	0.56	6.23	37.25	79.29
13	+0.56	+6.25	+37.89	78.25

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1897 APRIL 17. ZONE 178. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.9	21.3	23.4	25.6	27.7	29.9	c	43 25.58	52 54 5.9 29.0	V 54.390	10 43 16.78	−14 7 47.11	−13 3219
2	9.1	52.5	54.3	56.3	58.3	0.4	a	43 25.85	52 54 " "	I 50.050	10 43 17.05	14 6 21.42	13 3218
3	9.3	24.5	26.9	29.0	31.1	33.4	c	8 28.98	53 14 5.7 28.6	III 49.010	11 8 20.16	14 26 4.59	14 3284
4	9.0	10.6	12.9	14.8	16.7	18.7	e	8 44.98	54 12 7.3 0.9	VII 51.290	11 8 36.15	15 24 55.00	15 3223[1]
5	9.2	51.1	53.1	55.2	57.5	59.6	c	6 55.30	55 26 5.0 29.2	III 47.140	12 6 46.49	16 37 35.75	16 3409
6	......	44.3	46.5	48.7	50.7	53.0	c	10 48.64	55 46 5.0 29.3	III A 41.995	12 10 39.84	16 59 13.34	16 3424
7	......	35.2	37.2	39.5	41.7	43.9	c	44 39.50	54 12 5.5 28.2	III B (46).930	12 44 30.75	15 20 13.08	15 3543
8	9.4	39.2	41.5	43.2	45.1	47.1	e	45 13.45	54 12 " "	V A 48.605	12 45 4.70	−15 27 15.35	−15 3545

Reduction Elements. Zone 178.

1897.	OBSERVED.			ADOPTED.		
	c	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 17.4	−0.062	+0.314	+0.144	−0.062	+0.314	+0.144

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Bradley 1462		φ Hydrae		b^2 Hydrae		γ Crateris		ζ Crateris		χ Virginis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	45 56 3.70		55 10 2.60		58 24 2.20		55 56 1.70		56 36 1.55		46 15 55.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	48.090	6 33.12	46.905	6 10.38	48.145	6 34.08	48.730	6 45.15	47.335	6 19.00	46.010	5 53.23
II Red. to Mer.	.030	1.73	.870	1.65	.095	1.61	.690	1.64	.330	1.63	45.920	1.72
VI Inclination	47.920		.710		47.965		.520		.190			−0.38
VII Refraction	.900	1 0.7	.710	1 24.3	.935	1 35.4	.510	1 27.0	.140	1 29.2	.785	1 1.6

	53 Virginis		m Virginis		89 Virginis		47 Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 27 56.80		47 0 3.75		56 26 2.20		63 16 3.10	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.		6 21.75		6 59.87	49.140	6 52.51		7 16.23
II Red. to Mer.		1.65	49.480	1.73	.010	1.64	50.325	1.56
VI Inclination	47.400	1.41	.365	0.56	48.920		.205	0.56
VII Refraction	.385	1 22.5	.295	1 3.4	.915	1 29.0	.170	1 57.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Bradley 1462	10 26 7.06	11	+0.26	−15.57	46 3 39.3	50.4
φ Hydrae	10 33 51.41	11	+0.24	−15.63	55 17 38.9	49.7
b^2 Hydrae	10 48	..	....	.....	58 32 13.3	50.6
γ Crateris	11 20 1.99	11	+0.24	−15.65	56 4 15.5	49.9
ζ Crateris	11 39 50.47	11	+0.24	−15.68	56 43 51.4	50.2
χ Virginis	12 34 13.91	11	+0.26	−15.65	46 22 51.9	49.3
53 Virginis	13 6 52.81	8	+0.25	−15.64	54 35 44.1	49.2
α Ursae Minoris S. P.	13 20 31.32	6	−0.74	[−15.62]	307 42	....
m Virginis	13 36 30.55	11	+0.26	−15.62	47 8 9.3	49.9
89 Virginis	13 44	..	....	.....	56 34 25.4	49.9
47 Hydrae	13 53 2.74	11	+0.23	−15.68	63 25 18.5	49.4

h		s
10.998	dt	−15.632
	Hourly rate	− 0.0070

	° ′ ″
Adopted Equator Point	38 56 49.85

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
9 51	29.826	46.3	44.5
10 37	29.844	45.2	44.3
11 40	29.842	44.2	43.1
12 41	29.835	43.6	42.2
13 15	29.838	43.1	42.0
13 54	29.842	42.7	41.3

REDUCTION TABLES FOR THE ZONE STARS.

No.	a	A	D	R
	s	s	″	″
1	+0.25	+6.58	+38.46	77.77
2	0.25	6.58	38.47	77.70
3	0.25	6.56	39.58	78.72
4	0.25	6.55	39.40	81.56
5	0.24	6.59	39.89	85.47
6	0.24	6.60	39.79	86.64
7	0.25	6.64	38.85	81.56
8	+0.25	+6.64	+38.85	81.92

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1897 APRIL 18. ZONE 179. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.8	11.7	13.5	15.4	17.5	19.7	a	8 45.23	54 12 5.5 29.3	I A 41.470	11 8 35.99	−15 24 54.68	−15 3223^1
2	8.8	41.1	43.4	45.4	47.6	49.7	c	8 45.44	54 12 " "	III A 42.380	11 8 36.20	−15 25 13.53	−15 3223^2

Reduction Elements. Zone 179.

	OBSERVED.			ADOPTED.		
1897.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 18.4....	−0.028	+0.289	+0.042	−0.028	+0.289	+0.042

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

CIRCLE READING.	ν Hydrae		b^2 Hydrae		δ Crateris		γ Crateris		β Corvi		χ Virginis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	54 28 2.35		58 24 2.20		53 2 1.55		55 56 2.30		61 38 3.65		46 13 58.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	49.510	7 0.62	48.195	6 35.62	49.785	7 5.71	48.790	6 46.31	49.360	6 58.35	42.075	4 37.77
II Red. to Mer......	.490	1.65	.175	1.61	.770	1.67	.730	1.64	.240	1.58	.040	1.73
VI Inclination	.350		.065		.600		.600			−1.41	41.910	3 15.18
VII Refraction	.325	1 21.4	.025	1 34.5	.580	1 17.5	.570	1 26.2		1 47.9	.855	1 1.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ν Hydrae..........	10 44 50.61	11	+0.18	−15.96	54 36 26.0	50.5
b^2 Hydrae..........	10 48 45.23	11	+0.17	−15.99	58 32 13.9	51.1
δ Crateris..........	11 14 29.68	11	+0.18	−16.00	53 10 26.4	51.1
γ Crateris..........	11 20 2.37	11	+0.18	−15.97	56 4 16.4	50.7
β Corvi..........	12 29 17.10	11	+0.16	−15.99	61 46 50.1	51.4
χ Virginis..........	12 34 14.21	11	+0.20	−15.88	46 22 53.9	51.3
α Ursae Minoris S. P.	13 20 36.60	7	−5.34	[−15.94]	307 42	....

h 11.528..........*dt*.................... s −15.965
Hourly rate 0.0000

Adopted Equator Point .... 38° 56′ 51.02″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
10 34	29.958	52.8	51.2
11 26	29.950	51.0	49.2
12 40	29.942	48.6	47.2

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	+0.18	+6.55	+39.32	80.80
2	+0.18	+6.55	+39.32	80.82

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1897 APRIL 28. ZONE 180. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	......	10.3	12.0	14.0	16.0	18.1	a	44 43.74	54 12 7.7	28.8	I B	47.300	12 44 30.72	−15 20 13.79	−15 3543
2	9.3	13.3	15.5	17.7	19.8	22.0	c	45 17.66	54 12 "	"	III A	49.055	12 45 4.65	15 27 17.87	15 3545
3	8.9	29.5	31.6	33.8	35.9	38.1	c	15 33.78	54 40 2.0	23.1	V	48.980	13 15 20.81	15 51 56.26	15 3647
4	8.9	16.1	18.2	20.3	22.6	24.9	c	38 20.42	54 48 8.3	0.0	III	47.760	13 38 7.49	−15 59 36.98	−15 3727

Reduction Elements. Zone 180.

	OBSERVED.			ADOPTED.		
1897.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 28.4....	−0.105	+0.130	−0.116	−0.105	+0.130	−0.116

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		Lalande 24277		γ Hydrae		47 Hydrae		40 H. Virginis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	58 50 3.70		61 26 4.65		63 16 4.35		54 38 4.20	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	50.635	7 23.19	49.720	7 5.64	50.690	7 22.92	48.520	6 41.29
II	Red. to Mer.	.700	1.60	.640	1.58	.635	1.56	.475	1.65
VI	Inclination	.535			−1.41	.515		.340	
VII	Refraction	.515	1 35.2		1 45.7	.490	1 54.7	.310	1 21.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 24277.	12 58 37.61	11	−0.15	−19.51	58 59 3.7	53.7
γ Hydrae.	13 13 41.89	8	−0.16	−19.54	61 34 56.2	53.4
α Ursae Minoris S. P.	13 20 41.10	4	−3.06	[−19.50]	307 42	. . . .
47 Hydrae.	13 53 7.05	11	−0.16	−19.50	63 25 23.5	53.1
40 H. Virginis	14 5 35.54	11	−0.13	−19.49	54 46 8.7	53.3

h 13.548. . . . . *dt*. . . . . s −19.510

Hourly rate 0.0000

Adopted Equator Point. . . . . ° ′ ″ 38 56 53.38

CLOCK TIME.	B.	t.	T.
h m	in	°	°
12 50	29.750	55.6	52.7
13 58	29.758	52.2	50.0

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	−0.13	+6.62	+38.13	79.52
2	0.13	6.63	38.10	79.89
3	0.13	6.67	36.20	81.34
4	−0.13	+6.71	+34.31	81.87

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1897 MAY 19. ZONE 181. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.9	6.0	8.1	10.3	12.7	14.8	(c)	5 10.38	57 10 4.3	25.0	V	48.820	13 4 48.64	−18 21 57.69	−18 3547
2	9.3	2.2	3.8	5.9	7.8	9.9	a	46 35.82	55 40 6.7	26.4	I A	42.615	14 46 14.02	16 52 59.22	16 3951
3	9.3	31.8	33.9	36.0	38.3	. . . . . .	c	46 36.08	55 40 "	"	V A	46.420	14 46 14.28	16 54 14.83	16 3952
4	8.9	4.0	6.2	8.4	10.6	12.8	c	1 8.40	57 8 6.1	26.2	III A	41.500	15 0 46.65	18 20 41.51	18 3975
5	. . . . . .	48.0	49.6	51.6	53.6	55.7	a	6 21.22	53 6 7.5	25.3	III A	48.960	15 5 59.32	14 20 52.32	14 4139
6	. . . . . .	8.9	11.0	13.2	15.5	17.5	c	7 13.22	53 6 "	"	III C	51.340	15 6 51.31	14 11 56.67	14 4145
7	. . . . . .	57.0	59.2	1.0	2.8	4.9	e	7 31.36	53 6 "	"	VII	53.315	15 7 9.46	−14 19 2.51	−14 4147

Reduction Elements. Zone 181.

	OBSERVED.			ADOPTED.		
1897.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
May 19.5. . . .	−0.156	−0.008	−0.098	−0.156	−0.008	−0.098

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	53 Virginis		*m* Virginis		89 Virginis		47 Hydrae		15 Librae		δ Libræ	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 27 54. 50		47 0 2. 05		56 26 1. 30		63 16 1. 35		49 48 3. 10		46 56 2. 85	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	48. 280	6 37. 06		7 9. 88	49. 790	7 5. 92		7 31. 94		7 39. 42	48. 750	6 45. 98
II Red. to Mer.	. 210	1. 65		1. 72	. 760	1. 63		1. 56		1. 70	. 725	1 72
VI Inclination	. 160		49. 910	1. 41	. 620		50. 080	1. 41	51. 450	1. 41	. 590	
VII Refraction	. 110	1 18. 8	. 895	1 0. 6	. 610	1 25. 1	. 025	1 52. 0	. 435	1 7. 1	. 555	1 0. 7

	37 Librae		41 Librae	
	° ′ ″		° ′ ″	
CIRCLE READING.	48 32 3. 00		57 46 1. 65	
	r	′ ″	r	′ ″
I Microm. Eq.	48. 730	6 45. 85	50. 790	7 25. 27
II Red. to Mer.	. 720	1. 70	. 760	1. 62
VI Inclination	. 590		. 630	
VII Refraction	. 550	1 4. 3	. 635	1 30. 1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
53 Virginis	13 7 5. 98	11	−0. 25	−28. 29	54 35 52. 0	55. 7
α Ursae Minoris S. P.	13 20 55. 82	5	+3. 85	[−28. 17]	307 42	....
m Virginis	13 36 43. 60	11	−0. 24	−28. 09	47 8 15. 7	56. 6
89 Virginis	13 44 48. 03	11	−0. 26	−28. 28	56 34 33. 9	56. 9
47 Hydrae	13 53 15. 95	11	−0. 27	−28. 21	63 25 28. 3	56. 3
15 Librae	14 51 42. 50	11	−0. 24	−28. 32	49 56 52. 7	55. 5
δ Librae	14 55 59. 82	11	−0. 24	−28. 27	47 3 51. 3	57. 1
37 Librae	15 29 4. 65	11	−0. 24	−28. 23	48 39 54. 9	57. 0
41 Librae	15 33 30. 72	11	−0. 26	−28. 27	57 54 58. 6	56. 3

h 13. 588 .... *dt* .... s −28. 218
Hourly rate .... − 0. 0333

Adopted Equator Point .... ° ′ ″ 38 56 56. 42

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
13 12	30. 036	69. 1	68. 0
14 41	30. 024	66. 8	65. 2
15 47	30. 011	64. 9	63. 1

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	−0. 26	+6. 72	+35. 76	87. 24
2	0. 25	6. 71	26. 00	82. 98
3	0. 25	6. 71	25. 99	83. 04
4	0. 26	6. 78	23. 89	87. 76
5	0. 25	6. 62	23. 44	75. 70
6	0. 25	6. 61	23. 33	75. 28
7	−0. 25	+6. 62	+23. 29	75. 61

a = Instrumental corrections.
A = *α* to 1900.0
D = Z. D. S. to 1900.0

1897 MAY 26. ZONE 182. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	*α* 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9. 3	5. 9	7. 7	9. 7	11. 6	14. 0	a	46 39. 67	55 40 5. 7 26. 4	I A 42. 460	14 46 14. 04	−16 52 57. 91	−16 3951
2	9. 1	35. 6	37. 7	40. 0	42. 2	44. 4	c	46 39. 98	55 40 " "	V A 46. 325	14 46 14. 35	16 54 14. 67	16 3952
3	8. 8	7. 8	10. 0	12. 3	14. 5	16. 7	c	1 12. 26	57 8 5. 5 26. 4	III A 41. 370	15 0 46. 68	−18 20 40. 97	−18 3975

Reduction Elements. Zone 182.

	OBSERVED.			ADOPTED.		
1897.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
May 26.4	−0. 088	+0. 105	−0. 097	−0. 088	+0. 105	−0. 097

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 24277		α Virginis		15 Librae		ι Librae		β Librae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	58 50 1.25		49 28 3.45		49 47 56.35		58 12 1.35		47 50 3.05	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.		4 12.04	44.720	5 30.75		4 27.85	41.640	4 29.73		6 13.40
II Red to Mer.		1.60	.745	1.70		1.70	.630	1.61	47.055	1.73
VI Inclination	40.635	3 16.68		−1.41	41.480	3 16.68	.480	3 15.18	46.935	0.56
VII Refraction	.620	1 34.9		1 7.2	.425	1 8.2	.450	1 32.8	.880	1 3.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 24277	12 58 50.28	11	−0.12	−32.29	58 59 6.5	55.3
α Virginis	13 20 21.04	11	−0.10	−32.12	49 34 41.7	56.5
α Ursae Minoris S. P.	13 21 11.04	5	−2.44	[−32.12]	307 42	....
15 Librae	14 51 46.20	8	−0.10	−32.15	49 56 50.8	54.7
ι Librae	15 6 56.74	11	−0.12	−32.27	58 21 20.7	55.5
β Librae	15 12 3.40	11	−0.09	−32.21	47 57 22.3	55.1

h 14.300	*dt*	s −32.208
	Hourly rate	0.0000
	Adopted Equator Point	° ′ ″ 38 56 55.42

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
13 4	29.948	57.7	56.8
14 43	29.944	57.1	56.3
15 49	29.946	56.0	54.8

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	−0.11	+6.69	+25.89	84.26
2	0.11	6.69	25.89	84.31
3	−0.12	+6.75	+23.73	89.08

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1897 SEPTEMBER 3. ZONE 183. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	8.7	28.8	30.8	33.0	35.2	37.5	c	2 33.06	52 48	9.4	4.5	III	41.120	19 2 41.73	−13 56 29.87	−14 5296

Reduction Elements. Zone 183.

1897.	OBSERVED. *c*	*b*	*a*	ADOPTED. *c*	*b*	*a*
	s	s	s	s	s	s
September 3.2	−0.219	−0.072	−0.219	−0.219	−0.072	−0.219

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	2 H. Scuti		Bradley 2329		5 H. Scuti		Piazzi XVIII. 260		20 Aquilae		
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		
CIRCLE READING.	53 28 7.85		49 53 59.55		47 12 6.65		54 16 7.20		46 58 6.95		
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	
I Microm. Eq.	*44.790	5 27.90	44.170	5 18.62	47.720	6 27.08	43.850	5 12.00	41.550	4 27.79	
II Red. to Mer.	.780	1.66	.150	1.69	.730	1.72	.820	1.65	.520	1.72	
VI Inclination	.390		.060			−0.38	.685		.360		
VII Refraction	.375	1 16.3	.020	1 7.1	.560	1 1.2	.665	1 18.7	.365	1 0.7	*Bisections discordant.

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
2 H. Scuti	18 23 20.97	11	−0.45	+2.96	53 34 53.7	0.6
Bradley 2329	18 29 20.10	11	−0.44	+3.04	50 0 27.0	1.9
5 H. Scuti	18 37 55.83	11	−0.43	+3.06	47 19 36.3	2.7
Piazzi XVIII. 260	18 55 41.92	11	−0.46	+2.95	54 22 39.5	2.1
20 Aquilae	19 7 6.85	11	−0.43	+2.97	47 3 37.2	1.3

h 18.712 . . . . *dt* . . . . s +2.996
Hourly rate 0.0000
Adopted Equator Point . . . . 38° 57′ 1″.72

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
18 34	30.064	68.2	66.1
19 7	30.065	67.0	65.4

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	−0.45	+6.12	−12.60	74.54

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1897 SEPTEMBER 27. ZONE 184. CLAMP EAST.

SKINNER, OBSERVER. NO ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.1	20.7	22.8	24.9	27.1	29.3	c	27 24.96	52 50 11.2	5.6	III	43.910	21 27 38.96	−13 59 11.08	−14 6062

Reduction Elements. Zone 184.

1897.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
September 27.3	−0.194	−0.095	−0.445	−0.194	−0.095	−0.445

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	CIRCLE READING.	υ Capricorni 57° 20′ 5″.40		ν Aquarii 50° 38′ 4″.45		γ Capricorni 55° 58′ 4″.85		λ Capricorni 50° 40′ 7″.30		υ Aquarii 60° 4′ 3″.90	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	44.095	5 16.56	42.525	4 46.81	42.700	4 49.52	45.745	5 48.25		5 1.94
II	Red. to Mer.	.055	1.62	.500	1.68	.665	1.63	.725	1.68	43.330	1.59
VI	Inclination	43.930		.365		.495		.575		.180	0.56
VII	Refraction	.890	1 28.9	.375	1 9.6	.470	1 24.6	.535	1 9.8	.180	1 39.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
υ Capricorni	20 34 7.12	11	−0.65	+9.02	57 26 52.5	58.9
ν Aquarii	21 3 54.75	11	−0.61	+9.10	50 44 2.5	58.9
γ Capricorni	21 34 19.08	11	−0.64	+9.09	56 4 20.6	58.7
λ Capricorni	21 40 55.34	11	−0.61	+9.21	50 47 7.0	58.5
9 H. Draconis S. P.	22 26 13.95	11	−0.71	[+9.14]	295 12	. . .
υ Aquarii	22 28 59.87	11	−0.67	+9.16	60 10 47.3	59.1

h 21.474 . . . . *dt* . . . . s +9.116
Hourly rate 0.0000
Adopted Equator Point . . . . 38° 56′ 58″.82

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
20 46	30.050	62.7	61.2
22 34	30.074	61.0	59.8

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	"	"
1	−0.62	−5.50	−30.09	75.39

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1900 JANUARY 27. ZONE 185. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ' "	"		r	h m s	° ' "	°
1	8.5	53.7	56.0	58.3	0.5	2.6	c	13 58.22	303 46 10.0	8.8	III	46.760	2 13 15.88	−17 15 45.45	−17 442
2	7.8	18.7	20.7	23.0	25.2	27.4	c	18 23.00	305 20 10.0	8.9	III	47.280	2 17 40.62	15 41 30.63	15 414
3	......	33.9	35.8	37.8	39.6	42.0	a	20 7.78	304 20 10.0	8.3	I	44.280	2 19 25.39	16 42 30.01	16 438
4	7.5	17.9	20.0	22.1	24.4	26.4	c	20 22.16	307 18 10.0	7.6	V	43.290	2 19 39.73	13 44 43.86	13 440
5	8.8	30.9	33.0	35.1	37.4	39.5	c	23 35.18	306 54 10.0	9.7	III	48.600	2 22 52.74	14 7 0.37	14 459
6	......	8.7	10.9	13.0	15.0	17.2	c	26 12.96	307 18 10.0	9.0	III	44.725	2 25 30.50	13 44 14.26	13 464
7	......	59.0	1.1	3.3	5.5	7.6	c	28 3.30	305 20 10.0	8.0	III	48.840	2 27 20.84	15 41 0.71	15 449
8	8.0	53.5	55.4	57.3	59.0	1.5	a	32 27.44	303 28 10.0	7.5	I	46.970	2 31 44.99	17 33 41.02	17 503
9	8.7	48.6	50.6	52.9	55.0	57.1	c	32 52.84	303 12 10.0	7.3	III	46.605	2 32 10.40	17 49 50.50	18 448
10	8.0	16.6	18.7	20.9	23.0	25.3	c	34 20.90	307 14 10.0	9.2	III	46.630	2 33 38.38	−13 47 37.48	−13 498
11	8.5	......	21.5	23.6	25.8	27.9	c	37 23.63	307 2 10.0	8.0	....	....	2 36 41.09	−13 55 56	−14 507
12	8.8	16.4	18.5	20.6	22.7	25.0	c	38 20.64	307 2 “	“	V C	48.630	2 37 38.09	14 5 26.97	14 512
13	7.2	20.4	22.5	24.6	26.9	28.9	c	41 24.66	306 38 10.0	8.1	III	43.300	2 40 42.10	14 24 43.28	14 524
14	6.8	21.9	24.0	25.7	27.6	30.1	a	45 55.47	306 52 10.0	9.9	I C	47.850	2 45 12.87	14 15 39.40	14 541
15	8.8	55.6	57.8	59.8	2.2	4.0	c	45 59.88	306 52 “	“	III A	44.830	2 45 17.28	14 6 57.30	14 543
16	8.8	50.4	52.4	54.7	56.8	58.9	c	49 54.64	307 20 10.0	7.0	III B	43.680	2 49 12.02	13 45 47.96	13 552
17	7.8	14.8	17.0	19.2	21.4	23.5	c	53 19.18	307 20 “	“	III	42.350	2 52 36.54	13 42 59.74	13 560
18	7.0	58.3	0.4	2.6	4.4	6.9	c	2 2.52	307 18 10.0	7.8	....	....	3 1 19.82	13 49 21	14 601
19	7.0	35.5	37.5	39.6	42.0	44.0	c	2 39.72	307 18 “	“	III	50.860	3 1 57.02	13 42 15.36	13 592
20	7.9	21.4	23.3	25.6	27.8	29.9	c	5 25.60	307 18 “	“	III	46.210	3 4 42.87	−13 43 45.13	−13 599
21	9.0	19.0	21.0	23.1	25.5	27.5	c	6 23.22	307 18 “	“	III	41.255	3 5 40.49	−13 45 19.89	−13 601
22	8.3	16.4	18.7	20.6	22.6	24.3	e	6 51.03	307 6 10.0	8.3	V	42.650	3 6 8.30	13 56 54.85	14 612
23	7.2	32.3	34.3	36.5	38.7	40.9	c	9 36.54	307 6 “	“	I B	40.300	3 8 53.79	−14 0 50.04	−14 625

Reduction Elements. Zone 185.

1900.	OBSERVED.			ADOPTED.		
	c	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
January 27.2....	−0.138	+0.075	+0.569	−0.142	+0.094	+0.604
27.3....	−0.147	+0.113	+0.639			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ζ Ceti		υ Ceti		Lalande 3979		τ^3 Eridani		ζ Eridani		τ^4 Eridani	
	° ' "		° ' "		° ' "		° ' "		° ' "		° ' "	
CIRCLE READING.	310 12 8.00		299 28 7.60		302 46 8.80		297 2 8.50		311 50 9.05		298 56 8.65	
	r	' "	r	' "	r	' "	r	' "	r	' "	r	' "
I Microm. Eq......	45.925	5 5.97	47.680	5 39.13	48.715	5 59.27	44.150	4 31.52	46.480	5 16.16	42.700	4 3.93
II Red. to Mer......	.960	5.10	.690	5.21	.740	5.17	.205	5.24	.520	5.08	.760	5.22
VI Inclination......	46.110		.815		.860		.300		.615		.840	
VII Refraction.......	.165	1 11.7	.860	1 47.1	.900	1 34.1	.325	1 58.7	.660	1 7.8	.900	1 49.6

	Lalande 6476	
	° ' "	
CIRCLE READING.	308 0 9.50	
	r	' "
I Microm. Eq......	47.890	5 43.36
II Red. to Mer......	.915	5.12
VI Inclination......	48.045	
VII Refraction.......	.070	1 17.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ζ Ceti	1 47 13. 71	11	+0. 39	−41. 62	310 16 7. 4	53. 5
υ Ceti	1 55 59. 74	11	+0. 46	−41. 61	299 32 4. 8	54. 4
Lalande 3979	2 4 43. 35	11	+0. 44	−41. 54	302 50 39. 1	54. 7
τ³ Eridani	2 58 41. 47	11	+0. 48	−41. 68	297 4 46. 6	53. 7
ζ Eridani	3 11 41. 35	11	+0. 38	−41. 70	311 54 22. 5	54. 2
τ⁴ Eridani	3 15 46. 74	11	+0. 47	−41. 68	298 58 28. 2	54. 3
Lalande 6476	3 25 35. 38	11	+0. 40	−41. 64	308 4 40. 4	54. 6

h 1. 933 .... dt .... s −41. 590
Hourly rate .... — 0. 0663

Adopted Equator Point .... 321° 5′ 54″. 20

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
1 42	29. 96	30. 2	28. 7
2 35	29. 96	29. 2	27. 7
3 17	29. 95	28. 9	27. 9

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900. 0					
			303°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	s
303	+0. 438	2 0	−1. 074	−1. 084	−1. 092	−1. 100	−1. 107	−1. 117
304	0. 430	2 30	1. 239	1. 248	1. 256	1. 265	1. 273	1. 282
305	0. 423	3 0	1. 405	1. 413	1. 422	1. 430	1. 439	1. 447
306	0. 416	3 30	−1. 570	−1. 579	−1. 587	−1. 596	−1. 603	−1. 612
307	0. 409	....	.....	.....	.....	.....	.....	.....
308	+0. 402	....	.....	.....	.....	.....	.....	.....

APPARENT RIGHT ASCENSION.	$D =$ Z. D. N. to 1900.0						R					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	308°
h m	″	″	″	″	″	″	″	″	″	″	″	″
2 0	+4. 37	−4. 07	+3. 76	+3. 45	+3. 14	+2. 83	93. 58	90. 12	86. 84	83. 70	80. 72	77. 86
2 30	5. 24	4. 94	4. 63	4. 32	4. 01	3. 69	93. 71	90. 24	86. 96	83. 81	80. 84	77. 96
3 0	6. 12	5. 83	5. 51	5. 21	4. 91	4. 59	93. 69	90. 22	86. 94	83. 79	80. 82	77. 95
3 30	+6. 98	+6. 69	+6. 39	+6. 10	+5. 80	+5. 50	93. 63	90. 16	86. 88	83. 73	80. 76	77. 89

1900 JANUARY 29. ZONE 186. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9. 2	58. 3	0. 4	2. 4	4. 6	6. 9	c	32 2. 52	303 56 10. 0 8. 7	III	45. 060	2 31 19. 16	−17 6 19. 11	−17 501
2	8. 5	51. 5	53. 6	55. 7	58. 0	0. 1	c	32 55. 78	303 56 " "	III	45. 910	2 32 12. 41	17 6 2. 74	17 505
3	9. 2	36. 8	39. 0	41. 0	43. 3	45. 5	c	36 41. 12	303 14 10. 0 8. 8	III	45. 950	2 35 57. 74	17 48 4. 06	17 516
4	6. 0	28. 5	30. 6	32. 8	34. 9	37. 0	c	37 32. 76	306 4 10. 0 9. 8	III	43. 480	2 36 49. 32	14 58 42. 41	15 478
5	8. 7	4. 1	6. 2	......	10. 7	12. 8	c	39 8. 45	303 40 10. 0 7. 5	III	47. 070	2 38 25. 05	17 21 41. 68	17 524
6	9. 3	40. 2	42. 4	44. 6	46. 8	48. 9	c	39 44. 58	303 8 10. 0 8. 1	V	45. 145	2 39 1. 19	17 54 21. 44	18 462
7	7. 5	8. 9	11. 0	13. 0	14. 9	16. 8	e	44 42. 96	303 48 10. 0 9. 1	VII	47. 115	2 43 59. 53	17 13 41. 83	17 540
8	8. 3	22. 2	24. 2	26. 0	27. 9	30. 2	a	46 55. 92	305 14 10. 0 10. 0	I	46. 695	2 46 12. 45	15 47 41. 24	15 505
9	8. 8	57. 4	59. 7	1. 7	4. 0	6. 3	c	47 1. 82	305 14 " "	III C	44. 350	2 46 18. 35	15 54 54. 09	16 513
10	9. 0	57. 6	59. 8	1. 9	4. 0	5. 8	e	47 32. 07	305 14 " "	V B	45. 590	2 46 48. 60	−15 51 18. 87	−16 517
11	8. 7	40. 8	43. 0	45. 3	47. 4	49. 6	c	49 45. 22	304 34 10. 0 9. 7	III	47. 040	2 49 1. 75	−16 27 38. 12	−16 525
12	9. 2	29. 8	31. 8	34. 0	36. 3	38. 4	c	55 34. 06	303 14 10. 0 9. 0	III	43. 850	2 54 50. 59	17 48 43. 80	17 579
13	9. 3	54. 1	56. 3	58. 6	0. 8	3. 0	c	0 58. 56	303 6 10. 0 8. 0	III	42. 600	3 0 15. 06	17 57 8. 47	18 530
14	9. 0	48. 7	50. 9	53. 0	55. 0	57. 3	c	3 52. 98	305 42 10. 0 7. 8	III	42. 770	3 3 9. 42	15 20 57. 32	15 547
15	8. 3	......	2. 8	4. 7	6. 5	9. 0	a	9 34. 92	303 2 10. 0 8. 3	I	47. 460	3 8 51. 37	17 59 33. 53	18 561
16	7. 5	42. 9	44. 8	46. 9	49. 0	51. 0	c	9 46. 92	303 38 11. 7 10. 3	III	44. 470	3 9 3. 37	17 24 28. 76	17 623
17	8. 1	26. 3	28. 4	30. 5	32. 7	34. 8	c	15 30. 54	303 14 10. 0 7. 9	III	48. 485	3 14 46. 97	17 47 14. 63	17 641
18	6. 2	22. 0	24. 2	26. 4	28. 6	30. 6	c	19 26. 36	303 14 " "	III	46. 870	3 18 42. 77	17 47 45. 70	17 654
19	9. 0	39. 2	41. 2	43. 4	45. 6	47. 8	c	27 43. 44	303 30 10. 0 7. 9	III	49. 845	3 26 59. 80	17 30 47. 14	17 686
20	8. 2	6. 7	8. 9	11. 0	13. 2	15. 5	c	36 11. 06	304 4 10. 0 8. 7	III	46. 860	3 35 27. 37	−16 57 42. 43	−17 709
21	8. 8	48. 5	50. 8	53. 0	55. 0	57. 4	c	42 52. 94	303 12 10. 0 8. 5	III	47. 400	3 42 9. 23	−17 49. 34. 75	−17 727
22	7. 4	46. 6	48. 7	50. 5	52. 4	54. 8	a	46 20. 62	304 0 10. 0 8. 4	I B	47. 425	3 45 36. 88	17 4 43. 53	17 738
23	7. 8	36. 8	39. 0	41. 0	43. 3	45. 4	c	46 41. 10	304 0 " "	III	53. 830	3 45 57. 35	16 59 27. 83	17 742
24	8. 5	51. 6	53. 8	56. 0	58. 2	0. 4	c	47 56. 00	303 36 10. 0 8. 2	III	45. 310	3 47 12. 26	17 26 13. 73	17 745
25	8. 7	47 9	50. 0	52. 2	54. 5	56. 6	c	50 52. 24	304 18 10. 0 7. 6	III	46. 050	3 50 8. 47	16 43 57. 53	16 727
26	8. 0	32. 4	34. 5	36. 7	38. 8	41. 0	c	53 36. 68	303 12 10. 0 9. 0	III	48. 240	3 52 52. 91	17 49 18. 04	17 760
27	7. 2	10. 1	12. 4	14. 6	16. 7	18. 9	c	57 14. 54	303 24 10. 0 7. 5	III	43. 735	3 56 30. 75	17 38 44. 74	17 776
28	9. 2	14. 4	16. 7	18. 7	21. 0	23. 2	c	5 18. 80	303 58 10. 0 8. 4	III	48. 130	4 4 34. 96	17 3 17. 72	17 803
29	......	.....	41. 9	43. 9	45. 8	......	e	8 13. 78	303 30	....	....	4 7 29. 94	17 31 51	17 816
30	8. 6	34. 1	36. 4	38. 6	40. 8	43. 0	c	11 38. 58	303 54 10. 0 8. 1	V	42. 620	4 10 54. 71	−17 9 5. 03	−17 833

Reduction Elements. Zone 186.

1900.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
January 29. 2....	−0. 143	+0. 075	+0. 729	−0. 158	+0. 104	+0. 688
29. 4....	−0. 172	+0. 134	+0. 648			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ρ Ceti		σ Ceti		η Eridani		τ³ Eridani		Lalande 7685		o¹ Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	308 18 9. 55		305 22 8. 35		311 44 8. 80		297 2 9. 75		302 44 9. 25		313 56 9. 95	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43. 830	4 25. 38	42. 630	4 2. 94	45. 705	5 1. 90	44. 160	4 32. 22	42. 390	3 58. 00	44. 910	4 45. 89
II Red. to Mer......	. 855	5. 12	. 680	5. 15	. 780	5. 08	. 240	5. 24	. 430	5. 17	. 920	5. 06
VI Inclination	. 980		. 820		. 900		. 365		. 555		45. 065	
VII Refraction.......	44. 030	1 18. 0	. 860	1 26. 8	. 925	1 9. 2	. 360	2 0. 6	. 580	1 36. 4	. 080	1 4. 4

	Lalande 8205		53 Eridani		54 Eridani	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	300 10 8. 95		306 32 9. 85		301 10 8. 85	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44. 390	4 36. 30	45. 550	4 56. 72	46. 950	5 25. 41
II Red. to Mer......	. 440	5. 20	. 565	5. 13	. 970	5. 19
VI Inclination	. 535			1. 61	47. 120	
VII Refraction.......	. 610	1 46. 5		1 23. 7	. 160	1 42. 4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME. OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ρ Ceti..............	2 21 50. 45	11	+0. 46	−42. 60	308 21 22. 0	54. 5
σ Ceti..............	2 28 4. 15	11	+0. 48	−42. 59	305 24 49. 6	54. 9
η Eridani...........	2 52 16. 09	11	+0. 43	−42. 64	311 48 6. 6	55. 7
τ³ Eridani..........	2 58 42. 34	11	+0. 55	−42. 65	297 4 46. 6	53. 8
Lalande 7685......	4 2 51. 80	11	+0. 50	−42. 61	302 46 36. 0	55. 2
o¹ Eridani..........	4 7 42. 99	11	+0. 41	−42. 56	313 59 56. 5	55. 1
Lalande 8205......	4 16	..	....	.....	300 13 3. 9	53. 6
53 Eridani..........	4 33	..	....	.....	306 35 49. 6	55. 7
54 Eridani..........	4 36 47. 92	11	+0. 52	−42. 56	301 13 57. 0	54. 3

h		s
2. 670..........	*dt*....................	−42. 620
	Hourly rate	+ 0. 0270
		° ′ ″
	Adopted Equator Point........	321 5 54. 76

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
2 23	29. 635	16. 8	16. 0
3 15	29. 64	15. 3	15. 0
4 14	29. 645	14. 1	13. 3
4 39	29. 64	13. 4	13. 2

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. N. to 1900.0				
			303°	304°	305°	306°	307°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	″	″	″	″	″
303	+0. 501	2 30	−1. 220	−1. 228	−1. 238	−1. 246	−1. 256	+5. 26	+4. 96	+4. 65	+4. 34	+4. 03
304	0. 492	3 0	1. 385	1. 393	1. 403	1. 412	1. 421	6. 17	5. 87	5. 57	5. 26	4. 95
305	0. 484	3 30	1. 551	1. 559	1. 568	1. 577	1. 585	7. 08	6. 79	6. 49	6. 19	5. 89
306	0. 476	4 0	1. 712	1. 721	1. 729	1. 738	1. 746	7. 92	7. 65	7. 37	7. 09	6. 81
307	+0. 467	4 30	−1. 869	−1. 878	−1. 884	−1. 893	−1. 901	+8. 73	+8. 47	+8. 21	+7. 95	+7. 69

APPARENT RIGHT ASCENSION.	*R*				
	303°	304°	305°	306°	307°
h m	″	″	″	″	″
2 30	95. 08	91. 56	88. 23	85. 04	82. 02
3 0	95. 24	91. 71	88. 37	85. 17	82. 15
3 30	95. 39	91. 85	88. 51	85. 31	82. 28
4 0	95. 59	92. 04	88. 70	85. 49	82. 45
4 30	95. 70	92. 15	88. 80	85. 59	82. 55

1900 JANUARY 31. ZONE 187. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°	
1	8.3	46.6	48.7	50.9	53.2	55.3	c	58 50.94	306 14 10.0	9.0	III	47.250	2 58 5.93	−14 47 29.69	−14	593
2	9.5	15.1	17.4	19.5	21.7	23.9	c	0 19.52	306 14 “	“	III B	44.640	2 59 34.51	14 51 33.34	15	536
3	8.4	27.5	29.3	31.0	33.0	35.4	a	2 0.95	306 0 10.0	8.5	I	46.465	3 1 15.94	15 1 44.18	15	539
4	6.8	0.4	2.5	4.7	6.9	9.0	c	2 4.70	307 12 10.0	9.0	V	47.615	3 1 19.66	13 49 21.26	14	601
5	8.6	1.4	3.4	5.6	7.8	9.9	c	13 5.62	307 18 10.0	7.7	III	44.720	3 12 20.52	13 44 15.83	13	621
6	8.7	43.9	46.1	48.3	50.4	52.7	c	13 48.28	306 32 11.8	10.6	V	49.310	3 13 3.19	14 28 48.30	14	639
7	7.0	40.6	42.7	44.9	47.0	49.0	c	14 44.84	306 32 “	“	V (C)	43.370	3 13 59.75	14 37 8.43	14	646
8	7.8	27.6	29.6	31.8	34.0	36.1	c	19 31.82	306 32 “	“	III B	41.090	3 18 46.70	14 34 38.12	14	657
9	8.6	1.9	3.9	5.9	8.3	10.4	c	20 6.08	306 32 “	“	V A	44.585	3 19 20.95	14 27 4.32	14	658
10	7.6	26.4	28.7	30.8	33.0	35.0	c	22 30.78	305 20 10.0	7.7	III	43.300	3 21 45.66	−15 42 48.20	−15	598
11	8.7	46.5	48.6	50.7	53.0	55.0	c	25 50.76	306 20 10.0	9.1	III B	42.190	3 25 5.61	−14 46 19.24	−14	682
12	8.8	9.9	12.0	14.3	16.6	18.8	c	27 14.32	306 20 “	“	III	47.020	3 26 29.16	14 41 33.13	14	688
13	8.7	6.0	8.2	10.2	12.5	14.6	c	33 10.30	306 46 10.0	9.6	III	47.640	3 32 25.10	14 15 19.58	14	708
14	6.8	15.0	17.1	19.3	21.5	23.6	c	36 19.30	305 28 10.0	9.0	III	48.830	3 35 34.11	15 33 0.44	15	634
15	7.5	35.9	38.0	40.1	42.5	44.5	c	37 40.20	306 24 10.0	8.7	III	48.250	3 36 54.98	14 37 9.13	14	729
16	9.0	9.5	11.6	13.8	16.0	18.2	c	42 13.82	305 30 10.0	8.1	III A	49.245	3 41 28.59	15 27 37.56	15	651
17	8.2	19.4	21.8	23.8	26.0	28.0	c	43 23.80	305 30 “	“	III C	45.080	3 42 38.57	15 38 39.06	15	657
18	8.2	42.4	44.5	46.7	48.9	50.9	c	49 46.68	306 52 10.0	8.9	III B	45.255	3 49 1.39	14 13 18.65	14	769
19	8.5	33.0	35.0	37.0	39.3	41.3	c	50 37.12	306 52 “	“	III A	44.700	3 49 51.82	14 7 0.76	14	775
20	9.0	14.4	16.4	18.3	20.0	22.4	a	1 47.92	306 44 10.0	9.5	I	44.500	4 1 2.57	−14 18 17.98	−14	816
21	8.3	56.9	59.0	1.1	3.4	5.5	c	2 1.18	306 44 “	“	III	47.850	4 1 15.83	−14 17 14.96	−14	818
22	9.1	4.8	7.0	8.8	10.6	12.9	a	14 38.64	305 16 10.0	9.0	I	45.010	4 13 53.24	15 46 12.28	15	761
23	8.9	51.4	53.6	55.7	57.8	59.9	c	14 55.68	306 18 10.0	8.8	III	47.560	4 14 10.26	−14 43 21.81	−14	869

Reduction Elements. Zone 187.

1900.	OBSERVED. c	OBSERVED. b	OBSERVED. a	ADOPTED. c	ADOPTED. b	ADOPTED. a
	s	s	s	s	s	s
January 31.2....	−0.136	+0.039	+0.764	−0.140	+0.057	+0.772
31.3....	−0.145	+0.075	+0.780			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		σ Ceti		π Ceti		τ² Eridani		η Eridani		γ Eridani		o¹ Eridani	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	305 22 7.95		306 46 9.60		299 38 7.80		311 44 9.30		307 14 9.35		313 56 9.95	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	42.720	4 4.66	42.695	4 3.47	43.885	4 25.96	45.705	5 0.44	46.720	5 20.75	44.920	4 46.04
II	Red. to Mer......	.795	5.15	.725	5.13	.870	5.21	.695	5.08	.750	5.13	.925	5.06
VI	Inclination	.900		.840		44.015		.805		.870		45.060	
VII	Refraction.......	.935	1 26.7	.845	1 22.5	.045	1 48.2	.805	1 9.2	.890	1 21.6	.105	1 4.5

		A Eridani		Lalande 8205	
		° ′ ″		° ′ ″	
	CIRCLE READING.	310 32 8.85		300 10 8.00	
		r	′ ″	r	′ ″
I	Microm. Eq......	44.060	4 30.07	44.510	4 37.99
II	Red. to Mer......	.070	5.09	.520	5.20
VI	Inclination	.265		.640	
VII	Refraction.......	.280	1 12.7	.660	1 46.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
σ Ceti.............	2 28 5.59	11	+0.54	−44.12	305 24 51.1	56.4
π Ceti.............	2 40 6.65	11	+0.53	−44.17	306 48 55.7	55.7
τ² Eridani..........	2 47 14.94	11	+0.60	−44.18	299 40 50.8	56.0
η Eridani..........	2 52 17.55	11	+0.48	−44.18	311 48 5.6	54.8
γ Eridani..........	3 54 7.09	11	+0.52	−44.16	307 18 13.6	54.7
o¹ Eridani..........	4 7 44.51	11	+0.46	−44.16	313 59 56.5	55.2
A Eridani..........	4 10 23.69	11	+0.49	−44.18	310 35 31.3	53.9
Lalande 8205......	4 17 2.52	11	+0.60	−44.13	300 13 4.4	54.2

h 2.700..............*dt*........................ s −44.162

Hourly rate............ + 0.0028

Adopted Equator Point.......... ° ′ ″ 321 5 55.11

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
2 29	29.455	15.8	13.8
3 23	29.50	13.8	12.1
4 18	29.54	12.2	10.5

Note.
π Ceti. High wind.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0				D=Z. D. N. to 1900.0				R			
			305°	306°	307°	308°	305°	306°	307°	308°	305°	306°	307°	308°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
305	+0.546	2 30	−1.210	−1.219	−1.228	−1.237	+4.67	+4.36	+4.05	+3.75	88.10	84.94	81.90	79.01
306	0.537	3 0	1.375	1.383	1.393	1.403	5.61	5.31	5.00	4.70	88.37	85.19	82.15	79.25
307	0.526	3 30	1.539	1.549	1.558	1.568	6.56	6.26	5.96	5.66	88.61	85.43	82.38	79.47
308	+0.517	4 0	1.701	1.711	1.719	1.728	7.49	7.20	6.91	6.62	88.84	85.64	82.58	79.67
		4 30	−1.859	−1.868	−1.876	−1.883	+8.36	+8.09	+7.82	+7.55	89.08	85.8[illegible]	82.81	79.89

1900 FEBRUARY 1. ZONE 188. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.0	22.6	24.8	26.9	29.0	31.2	c	13 26.90	306 54 12.5	11.3	III A	47.545	3 12 41.19	−14 4 5.94	−14 638
2	8.2	13.2	15.2	17.4	19.6	21.8	c	14 17.44	306 54 "	"	III B	44.065	3 13 31.72	14 11 41.36	14 641
3	8.8	11.9	13.8	16.0	18.3	20.5	c	20 16.10	305 30 10.0	8.1	III	47.205	3 19 30.38	15 31 34.09	15 592
4	8.0	36.2	38.3	40.5	42.7	44.9	c	41 40.52	305 24 10.0	8.0	III B	46.080	3 40 54.68	15 41 9.01	15 649
5	8.2	36.4	38.5	40.6	42.9	45.0	c	42 40.68	305 24 "	"	III A	49.435	3 41 54.83	15 33 35.68	15 654
6	8.0	26.0	28.2	30.3	32.4	34.5	c	43 30.28	305 56 10.0	9.1	III	49.640	3 42 44.41	15 4 44.66	15 659
7	8.2	49.8	52.0	54.1	56.4	58.5	c	1 54 16	305 48 10.0	9.3	III	46.210	4 1 8.19	15 13 50.68	15 715
8	8.3	22.0	24.0	26.2	28.4	30.6	c	11 26.24	304 36 10.0	9.9	III	43.350	4 10 40.23	16 26 48.55	16 819
9	7.0	20.3	22.3	24.5	26.7	28.8	c	14 24.52	306 12 10.0	10.1	III B	46.375	4 13 38.46	14 52 59.10	14 866
10	9.2	46.6	48.9	50.8	53.0	55.2	c	14 50.90	306 12 "	"	III A	43.560	4 14 4.84	−14 47 24.60	−14 867
11	8.0	55.0	57.0	59.1	1.3	3.4	c	17 59.16	306 56 10.0	9.7	III	42.070	4 17 13.07	−14 7 6.12	−14 885
12	8.4	7.8	9.9	11.6	13.6	16.0	a	33 41.72	304 28 10.0	8.6	I	46.410	4 32 55.59	16 33 48.81	16 905
13	9.2	44.4	46.6	48.8	51.0	53.0	c	35 48.76	305 8 10.0	10.1	III	44.975	4 35 2.60	15 54 15.05	15 833
14	9.0	46.0	48.0	50.3	52.5	54.7	c	36 50.30	304 50 10.0	9.2	III B	45.020	4 36 4.15	16 15 29.03	16 921
15	9.3	26.6	28.6	30.7	33.0	......	c	39 30.81	304 50 "	"	III A	48.060	4 38 44.64	16 8 1.81	16 929
16	7.0	44.5	46.8	48.9	51.0	53.0	c	40 48.84	304 50 "	"	III B	46.320	4 40 2.67	16 15 3.93	16 937
17	9.2	24.1	26.3	28.5	30.6	32.9	c	50 28.48	304 50 10.0	9.9	III	49.180	4 49 42.25	16 10 54.61	16 986
18	5.5	31.1	33.2	35.4	37.7	39.7	c	51 35.42	304 26 10.0	9.6	III	49.735	4 50 49.19	16 34 45.23	16 992
19	8.0	36.0	38.1	40.2	42.4	44.6	c	56 40.26	304 48 10.0	9.6	III	43.870	4 55 54.00	−16 14 36.99	−16 1024

Reduction Elements. Zone 188.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
February 1.2....	−0.202	+0.096	+0.855	−0.210	+0.102	+0.872
1.4....	−0.217	+0.107	+0.888			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ζ Eridani		τ⁴ Eridani		Lalande 6476		20 Eridani		60 Eridani		ε Leporis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	311 50 9.00		298 56 14.20		308 0 9.15		303 14 9.60		304 38 9.60		298 32 9.05	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	46.715	5 20.22	42.620	4 2.06	48.050	5 47.10	46.450	5 16.25	47.495	5 35.87	45.925	5 6.34
II	Red. to Mer......	.700	5.08	.640	5.22	.080	5.12	.515	5.17	.545	5.15	46.005	5.22
VI	Inclination......	.805		.755		.280		.670		.625		.145	
VII	Refraction.......	.900	1 9.6	.795	1 52.5	.285	1 19.7	.660	1 35.0	.705	1 30.4	.160	1 54.7

		β Eridani		λ Eridani	
		° ′ ″		° ′ ″	
	CIRCLE READING.	315 48 9.55		312 8 15.65	
		r	′ ″	r	′ ″
I	Microm. Eq......	47.675	5 38.41		5 42.94
II	Red. to Mer......	.655	5.05		5.08
VI	Inclination......	.765		47.940	1.61
VII	Refraction......	.8[illegible]0	1 0.8	.975	1 9.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ζ Eridani	3 11 44.25	11	+0.51	−44.79	311 54 24.7	56.6
τ^4 Eridani	3 15 49.64	11	+0.65	−44.83	298 58 29.0	55.3
Lalande 6476	3 25 38.38	11	+0.55	−44.85	308 4 41.7	56.1
20 Eridani	3 32 29.77	11	+0.60	−44.86	303 17 56.0	56.5
60 Eridani	4 46 27.32	11	+0.59	−44.85	304 42 20.2	56.3
ε Leporis	5 1 59.86	11	−0.66	−44.93	298 35 25.9	56.1
β Eridani	5 3 42.44	11	+0.47	−44.85	315 52 52.2	55.2
λ Eridani	5 5 8.07	10	+0.51	−44.91	312 12 53.0	56.6

h		s
3.358	*dt*	−44.832
	Hourly rate	−0.0325

Adopted Equator Point ....321° 5′ 56″.08

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 7	29.735	13.6	12.8
4 7	29.75	12.4	11.8
5 7	29.75	11.5	10.9

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. N. to 1900.0				
			304°	305°	306°	307°	308°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	″	″	″	″	″
304	+0.596	3 0	−1.346	−1.356	−1.364	−1.374	−1.383	+5.97	+5.67	+5.37	+5.06	+4.75
305	0.585	3 30	1.511	1.521	1.530	1.539	1.548	6.92	6.63	6.33	6.03	5.72
306	0.575	4 0	1.675	1.684	1.693	1.701	1.710	7.84	7.55	7.27	6.98	6.68
307	0.564	4 30	1.833	1.842	1.850	1.859	1.867	8.71	8.44	8.17	7.90	7.62
308	+0.553	5 0	−1.985	−1.992	−1.999	−2.007	−2.015	+9.53	+9.29	+9.04	+8.80	+8.54

APPARENT RIGHT ASCENSION.	*R*				
	304°	305°	306°	307°	308°
h m	″	″	″	″	″
3 0	92.51	89.10	85.90	82.83	79.91
3 30	92.64	89.23	86.02	82.95	80.02
4 0	92.77	89.35	86.14	83.06	80.13
4 30	92.85	89.43	86.22	83.14	80.20
5 0	92.96	89.54	86.32	83.23	80.30

1900 FEBRUARY 13. ZONE 189. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.3	32.5	34.6	36.7	38.8	41.0	c	7 36.72	303 56 10.0	4.0	III B	47.675	4 6 48.02	−17 6 35.24	−17 814
2	6.0	14.4	16.6	18.7	20.8	23.0	c	8 18.70	303 30 10.0	4.2	III B	50.010	4 7 30.00	17 31 51.26	17 816
3	8.7	5.4	7.5	9.6	11.7	13.9	c	22 9.62	304 54 10.0	5.0	III	45.220	4 21 20.81	16 6 5.34	16 855
4	8.4	32.7	34.9	37.0	39.3	41.2	c	22 37.02	304 54 "	"	V B	39.855	4 21 48.21	16 11 2.55	16 857
5	8.5	56.9	59.2	1.3	3.6	5.5	c	27 1.30	304 20 10.0	4.6	III	43.160	4 26 12.47	16 40 46.50	16 879
6	8.0	45.0	47.0	48.8	50.8	53.1	a	28 18.83	304 50 10.0	5.4	I	44.225	4 27 29.99	16 10 22.77	16 886
7	8.0	23.8	26.2	28.5	30.6	32.9	c	28 28.40	303 14 10.0	4.4	III	46.400	4 27 39.59	17 45 47.66	17 900
8	8.2	30.6	32.7	34.6	36.4	38.8	a	31 4.64	303 58 10.0	3.4	I	48.670	4 30 15.79	17 1 0.56	17 909
9	9.3	14.3	16.5	18.9	21.0	23.3	c	31 18.80	303 20 10.0	4.7	III	47.210	4 30 29.96	17 39 31.51	17 910
10	8.0	13.4	15.6	17.6	19.6	21.4	e	36 47.45	303 8 10.0	5.0	V	43.710	4 35 58.58	−17 52 40.38	−17 928
11	8.8	35.1	37.3	39.5	41.7	43.9	c	37 39.50	303 8 "	"	V A	45.820	4 36 50.63	−17 48 44.97	−17 930
12	8.1	9.8	12.1	14.2	16.5	18.7	c	39 14.26	303 0 12.0	6.4	III	42.770	4 38 25.38	18 0 55.68	18 902
13	8.1	40.0	42.0	43.9	45.8	48.0	a	40 14.05	303 24 12.0	6.4	III	44.970	4 39 25.16	17 36 12.33	17 938
14	8.8	13.9	16.2	18.2	20.6	22.8	c	43 18.34	303 52 10.0	3.5	V	45.280	4 42 29.43	17 8 8.60	17 950
15	6.8	20.3	22.4	24.5	26.6	.....	c	46 24.53	305 2 10.0	4.7	III	43.735	4 45 35.58	15 58 32.89	16 963
16	8.1	16.6	18.8	20.9	23.1	25.3	c	50 20.94	303 16 10.0	2.6	III	45.590	4 49 32.00	17 44 3.45	17 983
17	8.0	42.3	44.5	46.6	48.8	50.9	c	51 46.62	304 56 10.0	6.0	III	49.380	4 50 57.64	16 2 43.65	16 993
18	8.7	20.6	22.7	24.9	27.1	29.3	c	52 24.92	304 56 "	"	III	46.590	4 51 35.94	16 3 37.51	16 996
19	9.0	38.8	40.9	43.1	45.2	47.4	c	53 43.08	304 56 "	"	III A	44.525	4 52 54.09	16 1 2.13	16 1000
20	7.9	2.4	4.4	6.6	8.9	10.9	c	57 6.64	303 16 10.0	4.4	III	45.910	4 56 17.66	−17 43 56.21	−17 1009
21	8.4	10.4	12.7	14.8	17.0	19.0	c	8 14.78	305 0 10.0	4.4	III	44.060	5 7 25.71	−16 0 26.31	−16 1066
22	7.0	40.4	42.5	44.6	46.9	49.0	c	9 44.68	303 58 10.0	5.7	III	46.825	5 8 55.63	17 1 35.48	17 1052
23	8.7	27.2	29.3	31.4	33.6	35.7	c	11 31.44	305 2 10.0	4.6	III	43.980	5 10 42.36	15 58 27.57	16 1082
24	8.4	33.2	35.4	37.5	39.7	41.9	c	15 37.54	303 48 10.0	4.5	III	42.360	5 14 48.46	17 13 2.06	17 1084
25	8.8	56.5	58.6	0.8	3.0	5.0	c	18 0.78	304 50 10.0	4.9	III B	39.610	5 17 11.67	−16 15 4.52	−16 1114

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
26	8.0	30.0	32.0	34.2	36.5	38.6	c	18 34.26	304 50	10.0	4.9	III A	45.765	5 17 45.14	−16 6 38.49	−16 1117
27	8.9	21.5	23.6	25.9	28.2	30.2	c	20 25.88	304 50	"	"	III	48.640	5 19 36.74	16 8 58.05	16 1127
28	8.2	58.5	0.5	2.7	4.9	7.0	c	23 2.72	305 24	10.0	6.5	III	43.805	5 22 13.56	15 36 28.66	15 1039
29	8.0	37.3	39.3	41.5	43.7	45.7	c	33 41.50	304 14	10.0	5.2	III	46.600	5 32 52.30	16 45 38.71	16 1185
30	6.8	55.1	57.4	59.6	1.8	3.9	c	34 59.56	304 2	10.0	5.6	III	44.190	5 34 10.36	−16 58 25.40	−17 1196
31	9.1	37.1	39.0	41.5	43.8	45.7	c	36 41.42	304 52	10.0	5.7	III	41.960	5 35 52.20	−16 9 5.42	−16 1200
32	6.0	59.3	1.3	3.6	5.8	7.9	c	38 3.58	304 14	10.0	5.7	III	43.720	5 37 14.36	16 46 33.67	16 1208
33	8.2	4.5	6.5	8.8	10.9	13.1	c	41 8.76	303 32	10.0	5.2	III	46.570	5 40 19.54	17 27 41.24	17 1230
34	8.4	53.9	56.0	58.1	0.4	2.5	c	45 58.18	304 28	10.0	5.1	III	46.590	5 45 8.91	16 31 37.98	16 1263
35	9.2	39.6	41.7	43.8	46.1	48.2	c	49 43.88	305 0	8.6	2.0	III	42.550	5 48 54.59	16 0 56.05	16 1290
36	8.3	51.7	53.9	56.2	58.4	0.5	c	50 56.14	303 14	8.6	2.5	V	53.345	5 50 6.87	−17 43 34.39	−17 1285

Reduction Elements. Zone 189.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
February 13.3....	−0.070	−0.094	+0.427	−0.055	−0.096	+0.451
13.4....	−0.040	−0.098	+0.475			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 7685		*A* Eridani		Lalande 8205		53 Eridani		α Leporis		ζ Leporis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	302 44 6.95		310 32 7.10		300 8 8.55		306 30 7.65		303 6 7.35		306 8 7.85	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.940	5 6.40	47.610	5 38.18	44.090	4 30.93	45.270	4 53.33	46.720	5 21.73	46.490	5 17.63
II Red. to Mer......	.975	5.17	.650	5.09	.130	5.20	.300	5.14	.775	5.17	.585	5.14
VI Inclination......	46.165	−3 13.40	.780	−3 13.40	.300		.450		.945		.750	
VII Refraction.......	.170	1 30.5	.810	1 8.2	.335	1 40.1	.510	1 18.8	.990	1 29.8	.760	1 20.3

	δ Leporis		η Leporis	
	° ′ ″		° ′ ″	
CIRCLE READING.	300 8 8.80		306 48 5.70	
	r	′ ″	r	′ ″
I Microm. Eq......	42.275	3 55.93		5 42.58
II Red. to Mer......	.315	5.20	47.885	5.12
VI Inclination......	.450		.945	−0.64
VII Refraction.......	.480	1 41.0	.990	1 18.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 7685......	4 2 56.52	11	+0.29	−47.36	302 44 34.6	54.9
A Eridani...........	4 10 27.05	11	+0.23	−47.48	310 33 28.8	52.4
Lalande 8205......	4 17 5.94	11	+0.31	−47.49	300 11 4.6	55.5
53 Eridani...........	4 34 24.93	11	+0.26	−47.56	306 33 47.3	54.7
α Leporis...........	5 29 8.29	11	+0.28	−47.48	303 10 4.4	53.7
ζ Leporis...........	5 43 14.67	11	+0.26	−47.46	306 12 10.3	54.9
δ Leporis...........	5 47 50.47	11	+0.31	−47.53	300 10 28.9	[57.2]
η Leporis...........	5 52 40.31	11	+0.26	−47.49	306 52 34.4	55.4

h			s
4.270	............*dt*.....................		−47.472
	Hourly rate...........		− 0.0124
			° ′ ″
	Adopted Equator Point........		321 3 54.50

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
3 59	29.70	45.0	43.8
4 55	29.735	43.1	41.9
5 54	29.785	40.9	40.1

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1900.0				*R*			
			303°	304°	305°	306°	303°	304°	305°	306°	303°	304°	305°	306°
	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
303	+0.285	4 0	−1.467	−1.477	−1.488	−1.500	+ 9.01	+ 8.73	+ 8.44	+ 8.14	89.72	86.40	83.23	80.22
304	0.277	4 30	1.633	1.644	1.654	1.664	10.10	9.82	9.54	9.26	89.97	86.64	83.46	80.44
305	0.270	5 0	1.796	1.806	1.816	1.825	11.14	10.88	10.60	10.33	90.20	86.86	83.68	80.65
306	+0.263	5 30	1.955	1.964	1.973	1.983	12.09	11.84	11.60	11.34	90.45	87.10	83.91	80.87
		6 0	−2.106	−2.114	−2.122	−2.130	+12.94	+12.72	+12.50	+12.27	90.70	87.34	84.14	81.10

1900 FEBRUARY 14. ZONE 190. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°	
1	9.2	22.6	24.8	27.0	29.2	31.3	c	11 26.98	303 4 10.0	0.9	III	48.365	4 10 38.36	−17 57 15.27	−18	790
2	8.0	50.0	52.2	54.2	56.4	58.6	c	17 54.28	306 16 10.0	1.8	III	46.170	4 17 5.57	14 45 47.67	14	884
3	9.1	13.9	16.0	18.1	20.3	22.4	c	19 18.14	306 0 10.0	2.6	III	46.290	4 18 29.43	15 1 45.62	15	772
4	8.5	6.5	8.7	10.8	12.9	15.0	c	23 10.78	305 20 10.0	2.2	III	46.595	4 22 22.06	15 41 41.62	15	788
5	7.5	6.0	8.2	10.3	12.5	14.5	c	25 10.30	307 10 10.0	2.5	III	42.785	4 24 21.53	13 52 49.60	13	892
6	8.6	46.3	48.6	50.7	52.8	55.0	c	35 50.68	305 20 10.0	0.9	V	43.430	4 35 1.89	15 42 43.87	15	832
7	7.8	55.8	57.9	0.1	2.2	4.3	c	43 0.06	307 16 10.0	1.9	III	46.330	4 42 11.20	−13 45 41.04	−13	972

Reduction Elements. Zone 190.

1900.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
February 14.3....	−0.073	−0.039	+0.504	−0.073	−0.039	+0.504

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 7685		o¹ Eridani		53 Eridani		60 Eridani	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	302 44 5.45		313 56 6.75		306 32 6.25		304 38 6.20	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42.315	3 56.77	44.855	4 45.44	45.495	4 57.54	47.290	5 32.37
II Red. to Mer......	.345	5.17	.910	5.06	.520	5.13	.350	5.15
VI Inclination	.510		45.040		.680		.500	
VII Refraction	.525	1 32.2	.080	1 1.6	.710	1 20.1	.505	1 25.9

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 7685......	4 2 56.53	11	+0.35	−47.45	302 46 35.2	55.6
o¹ Eridani...........	4 7 47.72	11	+0.26	−47.39	313 59 55.6	55.2
53 Eridani...........	4 34 24.81	11	+0.32	−47.52	306 35 48.8	56.3
60 Eridani...........	4 46 29.96	11	+0.33	−47.43	304 42 17.8	55.2

h 4.382............*dt*...................... s −47.448
Hourly rate............ 0.0000
Adopted Equator Point .... 321° 5′ 55.58″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 0	30.00	41.2	39.6
4 44	29.98	40.3	38.8

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					
			303°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	s
303	+0.346	4 0	−1.447	−1.458	−1.469	−1.479	−1.491	−1.501
304	0.338	4 30	1.613	1.624	1.634	1.644	1.655	1.665
305	0.330	5 0	−1.778	−1.787	−1.797	−1.807	−1.816	−1.827
306	0.322	....	.....	.....	.....	.....	.....	.....
307	0.316	...	.....	.....	.....	.....	.....	.....
308	+0.308	....	.... .	.... .	.....	.....	.....	.....

APPARENT RIGHT ASCENSION.	*D* = Z. D. N. to 1900.0						*R*					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	308°
h m	″	″	″	″	″	″	″	″	″	″	″	″
4 0	+ 9.03	+ 8.75	+ 8.46	+ 8.16	+ 7.88	+7.58	91.54	88.15	84.92	81.87	78.94	76.16
4 30	10.14	9.87	9.59	9.30	9.02	8.72	91.60	88.21	84.98	81.92	79.00	76.21
5 0	+11.20	+10.93	+10.66	+10.39	+10.12	+9.84	91.64	88.25	85.02	81.96	79.03	76.24

1900 FEBRUARY 19. ZONE 191. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	8.6	13.9	15.9	18.0	20.3	22.4	c	50 18.10	306 24 10.0 3.8	III 46.920	4 49 28.16	−14 37 35.44	−14 988
2	9.0	26.8	28.8	30.8	32.7	34.5	e	52 1.01	305 28 10.0 3.6	V 44.950	4 51 11.08	15 34 17.26	15 899
3	8.0	33.4	35.4	37.7	39.7	41.9	c	55 37.62	305 8 10.0 2.9	III 45.230	4 54 47.68	15 54 14.81	15 914
4	8.7	47.2	49.2	51.4	53.5	55.8	c	56 51.42	305 8 " "	III 46.865	4 56 1.47	15 53 40.31	15 921
5	8.9	11.8	13.9	16.0	18.3	20.4	c	58 16.08	305 38 10.0 3.3	III 48.900	4 57 26.12	15 22 59.30	15 925
6	7.9	46.4	48.6	50.8	53.0	55.0	c	3 50.76	306 54 10.0 4.6	III 48.225	5 3 0.75	14 7 8.04	14 1051
7	7.8	21.2	23.4	25.6	27.7	29.8	c	5 25.54	306 10 10.0 5.2	III 46.860	5 4 35.52	14 51 36.04	14 1055
8	8.3	55.8	57.9	0.0	2.2	4.4	c	7 0.06	307 2 10.0 4.0	III 45.300	5 6 10.04	14 0 4.26	14 1064
9	8.4	5.4	7.7	9.8	11.9	14.0	c	9 9.76	306 20 10.0 5.4	III 47.880	5 8 19.72	14 41 15.67	14 1070
10	6.5	49.9	51.9	54.1	56.2	58.4	c	13 54.10	305 42 10.0 4.4	III 46.790	5 13 4.05	−15 19 38.83	−15 1001
11	8.3	49.9	52.0	54.2	56.4	58.5	c	14 54.20	307 8 10.0 4.0	III 44.750	5 14 4.11	−13 54 14.30	−13 1121
12	6.8	34.4	36.6	38.8	40.9	43.0	c	17 38.74	306 22 10.0 4.9	III 47.950	5 16 48.66	14 39 14.21	14 1105
13	7.0	32.3	34.4	36.6	38.8	41.0	c	19 36.62	306 6 10.0 4.7	III 46.770	5 18 46.54	14 55 37.74	14 1117
14	6.5	50.4	52.5	54.8	56.9	59.0	c	22 54.72	307 8 10.0 4.1	III B 46.950	5 22 4.60	13 56 45.13	13 1152
15	8.7	42.0	44.2	46.3	48.5	50.7	c	23 46.34	307 8 " "	III 50.035	5 22 56.20	13 52 32.01	13 1157
16	9.2	26.2	28.3	30.5	32.7	34.8	c	26 30.50	305 38 10.0 3.9	III B 46.510	5 25 40.39	15 26 57.77	15 1058
17	9.0	48.1	50.2	52.4	54.6	56.7	c	26 52.40	305 38 " "	V 47.430	5 26 2.28	15 23 27.81	15 1060
18	8.4	23.8	25.9	28.0	30.3	32.4	c	30 28.08	305 38 " "	III A 44.550	5 29 37.94	15 21 6.76	15 1082
19	7.0	28.6	30.8	32.8	35.0	37.2	c	32 32.88	305 8 10.0 3.5	III 48.760	5 31 42.74	15 53 2.30	15 1094
20	8.0	19.0	21.3	23.5	25.7	27.8	c	34 23.46	306 12 10.0 3.0	III 49.120	5 33 33.29	−14 48 52.47	−14 1190
21	8.8	58.0	0.3	......	4.6	6.7	c	36 2.40	305 52 10.0 2.7	III B 45.015	5 35 12.23	−15 13 26.14	−15 1111
22	9.2	24.6	26.8	28.9	31.1	33.4	c	41 28.96	305 52 " "	III B 49.315	5 40 38.76	15 12 3.03	15 1149
23	9.0	48.1	50.3	52.4	54.5	58.7	c_2 d_1	41 50.23	305 52 " "	V C (45).080	5 41 0.03	15 16 38.36	15 1151
24	7.0	15.7	17.9	20.0	22.2	24.4	c	46 20.04	305 34 10.0 3.4	III 43.000	5 45 29.81	15 28 51.42	15 1182
25	8.9	44.4	46.6	48.8	51.0	53.0	c	48 48.76	305 14 10.0 3.7	III B 42.780	5 47 58.52	15 52 9.86	15 1198
26	6.5	39.9	42.0	44.2	46.4	48.7	c	50 44.24	305 14 " "	III A 44.775	5 49 53.99	15 45 3.09	15 1212
27	9.1	32.3	34.4	36.5	38.7	40.7	c	51 36.52	305 32 10.0 2.5	III 47.810	5 50 46.27	15 29 19.41	15 1215
28	8.7	14.0	16.3	18.3	20.5	22.6	c	53 18.34	307 8 10.0 3.0	III 48.280	5 52 28.04	13 53 5.56	13 1310
29	8.6	30.3	32.5	34.5	36.7	38.8	c	54 34.56	305 36 10.0 3.3	III 43.910	5 53 44.29	15 26 33.76	15 1230
30	7.7	32.2	34.5	36.5	38.4	40.3	e	56 6.63	305 14 10.0 3.5	V 43.840	5 55 16.35	−15 48 37.28	−15 1238
31	8.0	22.2	24.5	26.6	28.8	30.9	c	0 26.60	305 22 10.0 3.6	III 43.780	5 59 36.30	−15 40 36.58	−15 1261
32	5.0	23.8	25.9	28.1	30.3	32.4	c	2 28.10	306 6 10.0 3.5	III 46.950	6 1 37.78	14 55 33.56	14 1331
33	8.7	43.1	45.3	47.4	49.6	51.8	c	3 47.44	305 46 10.0 4.7	III 48.850	6 2 57.12	15 14 57.18	15 1272
34	6.0	48.2	50.2	52.4	54.6	56.7	c	5 52.42	306 28 10.0 4.1	III 45.370	6 5 2.07	14 34 2.55	14 1348
35	7.0	38.0	40.2	42.5	44.6	46.7	c	7 42.40	305 22 10.0 2.6	III C 46.400	6 6 52.07	15 46 12.87	15 1299
36	8.8	7.4	9.4	11.6	13.8	15.9	c	8 11.62	305 22 " "	III A 45.570	6 7 21.28	15 36 47.47	15 1307
37	7.7	9.3	11.6	13.7	15.9	17.9	c	16 13.68	307 4 10.0 4.6	III 48.540	6 15 23.28	13 56 59.24	13 1450
38	8.0	57.8	59.8	1.7	3.5	5.9	c	17 31.69	304 20 10.0 4.1	I A 48.350	6 16 41.32	16 37 54.34	16 1446
39	7.5	38.3	40.5	42.7	45.0	47.0	c	17 42.70	304 20 " "	III B 45.080	6 16 52.33	16 45 27.58	16 1448
40	8.4	21.7	23.9	25.9	28.0	30.3	c	21 25.96	305 58 10.0 4.4	III 42.290	6 20 35.55	−15 5 2.29	−15 1377
41	9.0	24.0	26.1	28.3	30.5	32.6	c	22 28.30	305 58 " "	III 46.420	6 21 37.89	−15 3 43.13	−15 1381
42	8.7	17.1	19.1	21.2	23.5	25.7	c	25 21.32	305 14 10.0 4.4	III 46.430	6 24 30.90	15 47 45.01	15 1399
43	8.0	10.9	13.0	15.2	17.5	19.5	c	27 15.22	306 20 10.0 4.2	III 49.670	6 26 24.77	14 40 39.27	14 1480
44	8.3	40.4	42.3	44.5	46.7	48.8	c	28 44.54	306 20 " "	III B 42.910	6 27 54.08	−14 46 2.83	−14 1489

Reduction Elements. Zone 191.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
February 19.2....	−0.166	+0.077	+0.810	−0.170	+0.082	+0.791
19.3....	−0.175	+0.088	+0.772			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		53 Eridani		54 Eridani		60 Eridani		ε Leporis		5 Monocerotis		6 Monocerotis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	306 32 6. 75		301 10 6. 05		304 38 6. 20		298 32 5. 95		314 46 7. 25		310 20 6. 90	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	45. 650	5 0. 69	47. 050	5 27. 39	47. 585	5 37. 74	46. 010	5 7. 69	48. 715	5 58. 90	47. 110	5 28. 52
II	Red. to Mer......	. 710	5. 13	. 080	5. 19	. 640	5. 15	. 030	5. 22	. 715	5. 06	. 145	5. 10
VI	Inclination	. 820		. 230		. 740		. 250		. 830		. 265	
VII	Refraction	. 880	1 22. 6	. 250	1 41. 0	. 790	1 28. 6	. 225	1 52. 5	. 880	1 2. 0	. 325	1 12. 4

		β Canis Majoris		ξ² Canis Majoris	
		° ′ ″		° ′ ″	
	CIRCLE READING.	303 8 6. 25		298 10 6. 85	
		r	′ ″	r	′ ″
I	Microm. Eq......	44. 800	4 44. 42	43. 400	4 17. 43
II	Red. to Mer......	. 840	5. 17	. 440	5. 23
VI	Inclination	45. 000		. 550	
VII	Refraction.......	. 030	1 34. 1	. 640	1 54. 7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
53 Eridani...........	4 34 25. 86	11	+0. 53	−48. 86	306 35 50. 0	57. 7
54 Eridani...........	4 36 53. 75	11	+0. 58	−48. 83	301 13 57. 6	56. 8
60 Eridani...........	4 46 31. 01	11	+0. 55	−48. 81	304 42 20. 5	58. 3
ε Leporis..........	5 2 3. 45	11	+0. 61	−48. 78	298 35 26. 4	58. 6
5 Monocerotis	6 10 49. 14	11	+0. 45	−48. 75	314 51 9. 2	59. 1
6 Monocerotis	6 13 43. 58	11	+0. 50	−48. 91	310 24 28. 1	57. 9
β Canis Majoris.....	6 19 8. 09	11	+0. 56	−48. 83	303 11 21. 7	58. 1
ξ² Canis Majoris.....	6 31 42. 23	11	+0. 62	−48. 82	298 12 34. 8	58. 3

h s
4. 750.............*dt* .... −48. 820
Hourly rate .... − 0. 0051
° ′ ″
Adopted Equator Point 321 5 58. 10

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 33	29. 90	23. 4	23. 3
5 29	29. 91	21. 8	21. 7
6 29	29. 915	21. 2	21. 1

Note.
31. Faint companion s. f.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTION.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0					*D* = Z. D. N. to 1900.0				
			304°	305°	306°	307°	308°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	″	″	″	″	″
304	+0. 556	4 30	−1. 510	−1. 521	−1. 533	−1. 544	−1. 555	+10. 23	+ 9. 95	+ 9. 66	+ 9. 37	+ 9. 08
305	0. 546	5 0	1. 678	1. 687	1. 699	1. 709	1. 720	11. 36	11. 07	10. 80	10. 52	10. 23
306	0. 537	5 30	1. 841	1. 851	1. 860	1. 870	1. 879	12. 42	12. 16	11. 90	11. 64	11. 36
307	0. 527	6 0	1. 999	2. 007	2. 017	2. 026	2. 035	13. 38	13. 14	12. 90	12. 65	12. 41
308	+0. 517	6 30	−2. 150	−2. 156	−2. 164	−2. 173	−2. 181	+14. 22	+14. 01	+13. 79	+13. 56	+13. 35

APPARENT RIGHT ASCENSION.	*R*				
	304°	305°	306°	307°	308°
h m	″	″	″	″	″
4 30	90. 93	87. 60	84. 45	81. 43	78. 56
5 0	91. 12	87. 78	84. 63	81. 60	78. 72
5 30	91. 28	87. 94	84. 78	81. 75	78. 87
6 0	91. 37	88. 02	84. 86	81. 83	78. 94
6 30	91. 43	88. 08	84. 92	81. 88	79. 00

1900 FEBRUARY 23. ZONE 192. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	......	14.3	16.5	18.6	20.7	23.0	c	9 18.62	304 46 10.0 0.7	III (B) 44.690	5 8 26.38	−16 19 26.38	−16 1072
2	9.2	23.9	26.0	28.1	30.4	32.5	c	10 28.18	304 46 " "	III 49.670	5 9 35.93	16 14 36.80	16 1079
3	8.8	12.3	14.4	16.5	18.8	20.8	c	13 16.56	305 58 10.0 1.2	III 49.555	5 12 24.28	15 2 35.43	15 995
4	8.0	50.8	53.0	55.2	57.4	59.5	c	13 55.18	305 18 10.0 0.6	III 44.690	5 13 2.90	15 44 11.33	15 999
5	8.9	14.3	16.3	18.5	20.5	22.6	c	18 18.44	305 28 10.0 0.9	III 45.200	5 17 26.13	15 34 0.78	15 1020
6	8.7	11.0	13.2	15.4	17.6	19.7	c	20 15.38	304 40 10.0 0.6	III 45.390	5 19 23.08	16 21 59.46	16 1126
7	7.5	58.6	0.6	2.7	4.9	7.0	c	22 2.76	306 54 10.0 1.5	III 47.710	5 21 10.41	14 7 8.28	14 1130
8	7.8	39.7	42.0	44.0	46.2	48.4	c	22 44.06	306 54 " "	III 44.765	5 21 51.70	14 8 4.95	14 1133
9	8.1	49.6	51.7	53.8	56.0	58.1	c	23 53.84	305 42 10.0 0.9	III 45.410	5 23 1.50	15 19 55.97	15 1047
10	8.5	57.5	59.7	1.9	4.0	6.0	c	28 1.82	305 46 10.0 0.9	III 43.050	5 27 9.46	−15 16 40.85	−15 1068
11	9.4	19.5	21.5	25.6	27.4	29.9	$c_4 d_3$	33 17.17	305 22 10.0 1.2	III 43.070	5 32 24.78	−15 40 41.25	−15 1099
12	8.9	18.9	21.0	23.0	24.8	27.1	a	41 52.70	305 52 10.0 2.1	I C 44.530	5 41 0.27	15 16 36.46	15 1151
13	8.4	56.8	59.0	1.1	3.3	5.6	c	42 1.16	305 52 " "	III A 42.550	5 41 8.73	15 7 34.04	15 1153
14	6.	58.0	0.0	1.9	3.8	6.0	a	43 31.83	304 42 10.0 1.9	I A 46.015	5 42 39.41	16 16 29.28	16 1244
15	8.2	28.4	30.6	32.7	35.0	37.0	c	43 32.74	304 42 " "	III C 44.660	5 42 40.32	16 26 38.35	16 1245
16	9.2	15.2	17.4	19.7	22.0	24.0	c	46 19.66	304 42 " "	III C 45.580	5 45 27.23	16 26 20.57	16 1265
17	8.3	3.4	5.6	7.9	10.0	12.2	c	47 7.82	303 52 10.0 2.0	III 47.260	5 46 15.39	17 9 24.29	17 1263
18	8.1	25.7	28.0	30.1	32.4	34.5	c	51 30.14	304 8 10.0 1.9	III B 38.810	5 50 37.69	16 59 18.41	17 1288
19	8.6	7.3	9.5	11.6	13.8	16.0	c	52 11.64	304 8 " "	III A 48.195	5 51 19.18	16 49 50.31	16 1301
20	8.7	34.4	36.3	38.3	40.2	42.3	a	54 8.12	305 16 10.0 0.7	I 47.960	5 53 15.63	−15 45 5.74	−15 1227
21	8.6	13.0	15.1	17.5	19.6	21.6	c	54 17.36	305 16 " "	III 51.440	5 53 24.87	−15 43 59.90	−15 1229
22	8.5	56.4	58.5	0.7	2.9	5.2	c	1 0.74	304 26 10.0 1.0	III 43.505	6 0 8.23	16 36 34.90	16 1347
23	8.3	39.5	41.6	43.8	46.0	48.2	c	3 43.82	303 14 10.0 1.5	III 44.710	6 2 51.32	17 48 15.12	17 1360
24	9.1	38.8	41.1	43.2	45.5	47.6	c	6 43.24	304 48 10.0 0.6	III 45.940	6 5 50.70	16 13 47.16	16 1381
25	8.8	54.0	56.3	58.2	0.4	2.6	c	7 58.30	304 48 " "	III B 45.690	6 7 5.75	16 17 5.40	16 1389
26	8.7	11.3	13.6	15.7	18.0	20.0	c	9 15.72	303 50 10.0 0.8	III 42.950	6 8 23.17	17 12 47.12	17 1399
27	8.7	1.0	3.0	5.0	6.8	9.1	a	12 35.10	303 30 10.0 0.6	I 44.470	6 11 42.55	17 32 17.58	17 1420
28	8.4	3.5	5.6	7.7	10.0	12.0	c	13 7.76	304 56 10.0 2.0	III 45.750	6 12 15.17	16 5 49.53	16 1417
29	8.2	18.9	21.2	23.3	25.5	27.6	c	13 23.30	304 56 " "	V 51.450	6 12 30.71	16 4 0.70	16 1418
30	8.5	14.0	16.1	17.8	19.6	21.9	a	15 47.49	306 44 10.0 1.3	I 45.900	6 14 54.86	−14 17 40.59	−14 1402
31	8.8	11.0	13.1	15.2	17.4	19.5	c	16 15.24	305 32 10.0 1.3	III 43.360	6 15 22.63	−15 30 33.92	−15 1347
32	8.3	40.4	42.5	44.8	47.0	49.1	c	17 44.76	304 52 10.0 1.7	III 47.250	6 16 52.16	16 9 20.82	16 1447
33	6.8	3.1	5.3	7.3	9.5	11.6	c	20 7.36	304 38 10.0 1.4	III 42.410	6 19 14.75	16 24 54.42	16 1461
34	7.0	51.8	53.9	56.0	58.0	0.4	c	22 56.02	304 26 10.0 1.5	III A 45.845	6 22 3.41	16 32 34.03	16 1483
35	9.0	7.1	9.2	11.4	13.5	15.7	c	23 11.38	304 26 " "	V B 41.600	6 22 18.77	16 40 25.17	16 1484
36	8.0	11.0	13.2	15.3	17.5	19.7	c	29 15.34	303 24 10.0 29.6	III 45.105	6 28 22.71	17 38 7.19	17 1528
37	8.4	6.0	8.2	10.3	12.5	14.5	c	34 10.30	305 10 10.0 0.5	III 46.735	6 33 17.61	15 51 30.01	15 1459
38	8.2	10.0	12.2	14.3	16.6	18.7	c	35 14.36	306 16 10.0 1.5	III 47.940	6 34 21.66	14 45 3.21	14 1523
39	8.7	54.0	56.3	58.4	0.7	2.8	c	38 58.44	304 54 10.0 1.6	III 45.860	6 38 5.74	16 7 46.91	16 1576
40	......	32.9	35.1	37.3	39.5	41.6	c	41 37.28	304 28 10.0 1.8	III 43.010	6 40 44.57	−16 34 42.61	−16 1591
41	9.1	13.7	16.0	18.2	20.4	22.5	c	42 18.16	305 10 10.0 1.5	III 51.960	6 41 25.43	−15 49 48.25	−15 1502
42	8.7	55.0	57.0	59.2	1.5	3.6	c	42 59.26	305 10 " "	V C 43.410	6 42 6.53	15 59 0.20	15 1507
43	8.1	38.9	41.2	43.4	45.6	47.7	c	44 43.36	305 50 10.0 1.1	III 41.605	6 43 50.62	15 13 5.78	15 1519[1]
44	9.2	27.0	29.0	31.2	33.5	35.4	c	45 31.22	305 50 " "	III B 43.650	6 44 38.48	15 15 40.22	15 1522
45	6.5	43.0	45.1	47.3	49.4	51.7	c	46 47.30	304 4 10.0 1.2	III 45.010	6 45 54.58	16 58 5.69	16 1624
46	8.6	30.0	32.2	34.3	36.4	38.5	c	48 34.28	305 56 10.0 1.0	III 47.160	6 47 41.52	−15 5 18.99	−15 1546

Reduction Elements. Zone 192.

	OBSERVED.			ADOPTED.		
1900.	c	b	a	c	b	a
	s	s	s	s	s	s
February 23.3....	−0.115	−0.022	+0.513	−0.126	+0.005	+0.520
23.4....	−0.138	+0.032	+0.526			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	54 Eridani		60 Eridani		64 Eridani		ε Leporis		ξ² Canis Majoris		θ Canis Majoris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	301 10 5.25		304 38 5.35		308 20 5.35		298 32 5.35		298 10 5.05		309 6 5.95	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	46.455	5 16.21	47.015	5 27.47	47.715	5 39.86	45.370	4 55.23	42.860	4 7.55	48.355	5 51.93
II Red. to Mer.	.500	5.19	.075	5.15	.720	5.12	.470	5.22	.890	5.23	.350	5.11
VI Inclination	.665		.255		.860		.530		43.080		.510	
VII Refraction	.670	1 35.5	.280	1 23.8	.900	1 13.3	.555	1 46.4	.130	1 48.7	.480	1 11.7

	19 Canis Majoris		Piazzi VI. 303	
	° ′ ″		° ′ ″	
CIRCLE READING.	301 2 4.70		295 46 4.60	
	r	′ ″	r	′ ″
I Microm. Eq.		4 31.43	44.800	4 44.37
II Red. to Mer.	44.120	5.17	.830	5.25
VI Inclination	.310	−0.64	45.030	
VII Refraction	.290	1 36.7	.000	2 0.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
54 Eridani	4 36 55.95	11	+0.34	−50.85	301 13 51.1	50.5
60 Eridani	4 46 33.26	11	+0.32	−50.90	304 42 14.2	52.3
64 Eridani	4 56 9.17	11	+0.29	−50.92	308 24 37.0	52.4
ε Leporis	5 2 5.77	11	+0.36	−50.92	298 35 19.4	51.8
ξ² Canis Majoris	6 31 44.45	11	+0.36	−50.85	298 12 29.1	53.1
θ Canis Majoris	6 50 25.47	11	+0.29	−50.91	309 10 51.3	53.0
19 Canis Majoris	6 52 9.98	11	+0.34	−50.88	301 5 4.0	52.1
Piazzi VI. 303	6 55 22.65	11	+0.38	−50.83	295 48 53.9	52.6

h 4.845 .... *dt* .... −50.898 s
Hourly rate .... + 0.0154
Adopted Equator Point .... 321° 5′ 52.22″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 33	29.48	42.8	43.0
5 25	29.50	41.4	41.6
6 4	29.50	40.0	39.5
6 57	29.505	38.5	40.1

Note.
ε Leporis. Images somewhat unsteady and woolly.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. N. to 1900.0				
			303°	304°	305°	306°	307°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	″	″	″	″	″
303	+0.329	5 0	−1.600	−1.612	−1.623	−1.634	−1.645	+11.99	+11.71	+11.43	+11.15	+10.88
304	0.322	5 30	1.768	1.779	1.790	1.801	1.811	13.11	12.84	12.58	12.31	12.05
305	0.315	6 0	1.933	1.942	1.951	1.962	1.971	14.14	13.90	13.65	13.40	13.14
306	0.308	6 30	2.090	2.099	2.107	2.115	2.124	15.05	14.82	14.60	14.37	14.13
307	0.301	7 0	−2.237	−2.245	−2.252	−2.259	−2.267	+15.83	+15.62	+15.42	+15.22	+15.02
308	+0.295	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

APPARENT RIGHT ASCENSION.	*R*				
	303°	304°	305°	306°	307°
h m	″	″	″	″	″
5 0	89.45	86.14	83.00	80.00	77.16
5 30	89.70	86.38	83.23	80.22	77.38
6 0	89.97	86.64	83.48	80.46	77.61
6 30	89.97	86.64	83.48	80.46	77.61
7 0	89.93	86.60	83.44	80.43	77.57

1900 FEBRUARY 27. ZONE 193. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.5	26.0	28.2	30.4	32.6	34.7	c	41 30.38	305 0 10.0	4.0	III	47.460	5 40 36.65	−16 1 25.25	−16 1227
2	7.8	53.2	55.4	57.5	59.6	1.8	c	50 57.50	303 14 10.0	4.2	III	47.770	5 50 3.75	17 47 24.47	17 1284
3	8.7	2.7	4.9	7.0	9.4	11.5	c	58 7.10	303 44 10.0	4.3	III	45.310	5 57 13.30	17 18 9.93	17 1329
4	7.0	38.9	41.0	43.1	45.4	47.6	c	59 43.20	305 0 10.0	3.9	III	44.425	5 58 49.37	16 2 23.06	16 1343
5	7.0	15.7	17.8	20.1	22.3	24.5	c	1 20.08	302 58 10.0	3.6	III	44.915	6 0 26.27	18 4 20.32	18 1291
6	6.9	56.0	58.0	0.3	2.5	4.6	c	3 0.28	304 8 10.0	4.1	III	48.470	6 2 6.44	16 53 7.62	16 1356
7	8.9	18.4	20.5	22.7	24.9	27.0	c	4 22.70	303 42 10.0	4.4	III	47.605	6 3 28.87	17 19 25.55	17 1365
8	8.3	49.9	52.0	54.3	56.5	58.6	c	6 54.26	303 50 10.0	4.0	III	47.845	6 6 0.41	17 11 20.63	17 1386
9	6.5	9.2	11.4	13.5	15.9	18.0	c	8 13.60	302 52 10.0	4.3	III	46.480	6 7 19.75	18 9 49.99	18 1334
10	8.5	48.0	50.3	52.5	54.7	56.9	c	10 52.48	303 36 10.0	3.8	III	46.660	6 9 58.61	−17 25 44.22	−17 1408
11	8.1	41.8	43.8	46.0	48.3	50.4	c	12 46.06	303 8 10.0	3.9	III	44.940	6 11 52.19	−17 54 18.78	−17 1421
12	8.0	11.2	13.4	15.5	17.7	19.8	c	14 15.52	304 20 10.0	4.7	III	42.810	6 13 21.62	16 42 55.14	16 1427
13	8.7	36.2	38.4	40.5	42.7	45.0	c	14 40.56	304 20 "	"	V B	38.120	6 13 46.66	16 47 39.22	16 1429
14	8.8	44.5	46.7	48.9	51.1	53.3	c	17 48.90	303 34 10.0	4.4	III	44.240	6 16 55.00	17 28 30.33	17 1461
15	8.3	18.3	20.6	22.6	24.9	27.0	c	18 22.68	303 0 10.0	3.8	III	45.055	6 17 28.79	18 2 16.91	18 1393
16	6.8	42.1	44.3	46.4	48.6	50.9	c	20 46.46	304 52 10.0	4.1	III	44.900	6 19 52.53	16 10 13.58	16 1467
17	8.9	15.2	17.5	19.6	21.9	24.0	c	26 19.64	303 44 10.0	4.5	III	44.560	6 25 25.70	17 18 23.34	17 1513
18	9.0	0.6	2.8	4.9	7.1	9.4	c	30 4.96	302 58 10.0	3.6	III	45.240	6 29 11.01	18 4 13.22	18 1466
19	8.2	20.3	22.5	24.7	26.9	29.0	c	32 24.68	304 18 10.0	3.1	III	47.710	6 31 30.69	16 43 21.38	16 1537
20	8.7	58.1	0.3	2.4	4.7	6.8	c	42 2.46	304 14 10.0	4.7	III	48.615	6 41 8.42	−16 47 3.00	−16 1593
21	8.0	10.9	13.2	15.3	17.4	19.6	c	46 15.28	303 34 10.0	4.3	III	48.320	6 45 21.24	−17 27 10.98	−17 1641
22	7.9	48.3	50.5	52.5	54.8	57.0	c	47 52.62	303 6 10.0	4.1	III	46.880	6 46 58.57	17 55 40.41	17 1651
23	9.0	21.8	24.0	26.1	28.3	30.4	c	49 26.12	303 52 10.0	4.5	III	43.010	6 48 32.06	17 10 51.87	17 1661
24	7.8	14.2	16.3	18.5	20.7	22.8	c	51 18.50	304 38 10.0	4.0	III	42.980	6 50 24.41	16 24 50.18	16 1652
25	7.3	38.8	40.9	43.0	45.2	47.3	c	51 43 04	304 0 10.0	3.4	V B	45.700	6 50 48.97	17 5 15.28	17 1679
26	7.0	53.6	55.8	57.9	0.2	2.4	c	53 57.98	304 16 10.0	4.2	III	47.440	6 53 3.88	16 45 25.51	16 1677
27	9.1	40.4	42.7	44.7	47.0	49.1	c	57 44.78	302 50 10.0	3.2	III A	43.915	6 56 50.68	18 9 23.41	18 1637
28	8.0	24.8	27.0	29.1	31.4	33.7	c	58 29.20	302 50 "	"	III	47.080	6 57 35.10	18 11 37.63	18 1644
29	9.1	31.5	33.6	35.9	38.1	40.3	c	1 35.88	303 34 10.0	4.5	V	47.230	7 0 41.76	17 27 32.79	17 1766
30	9.2	24.7	26.9	29.0	31.1	33.3	c	3 29.00	303 34 "	"	III	46.440	7 2 34.87	−17 27 46.68	−17 1782
31	9.0	57.7	59.9	2.0	4.3	6.5	c	5 2.08	303 34 "	"	III B	47.660	7 4 7.94	−17 30 36.62	−17 1795
32	9.2	21.7	24.1	26.1	28.3	30.6	c	6 26.16	303 18 10.0	3.5	III	48.250	7 5 32.02	17 43 13.08	17 1811
33	7.2	47.2	49.6	51.7	53.8	56.0	c	7 51.66	303 52 10.0	4.3	III	45.840	7 6 57.51	−17 9 57.22	−17 1828

Reduction Elements. Zone 193.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
February 27.3....	−0.202	+0.089	+0.812	−0.202	+0.102	+0.804
27.4....	−0.202	+0.116	+0.797			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	β Leporis		α Leporis		κ Orionis		δ Leporis		Piazzi VI. 303		γ Canis Majoris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	300 12 5.30		303 8 6.90		311 20 7.30		300 10 5.45		295 46 6.25		305 32 7.05	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.410	4 56.45	47.070	5 28.04	43.750	4 23.62		4 4.60	45.325	4 53.38	48.080	5 47.77
II Red. to Mer......	.480	5.20	.120	5.17	.755	5.09		5.20	.320	5.25	.095	5.14
VI Inclination	.620		.240		.900		42.830	−1.61	.425		.330	
VII Refraction.......	.670	1 47.7	.315	1 36.1	.925	1 11.5	.840	1 48.0	.470	2 9.9	.330	1 28.0

	29 Canis Majoris		Piazzi VII. 85		4 Navis	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	296 40 5.55		312 14 7.25		306 44 7.50	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.480	4 57.12		5 14.28	41.230	3 36.00
II Red. to Mer......	.510	5.24		5.08	.260	5.13
VI Inclination	.635		46.460	−1.61	.390	
VII Refraction.......	.690	2 4.9	.485	1 9.3	.450	1 24.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
β Leporis	5 24 51.11	11	+0.58	−52.45	300 15 19.3	54.1
α Leporis	5 29 12.80	11	+0.55	−52.50	303 12 4.0	54.9
κ Orionis	5 43 54.65	11	+0.48	−52.48	311 23 24.5	54.2
δ Leporis	5 47 54.92	9	+0.58	−52.50	300 12 25.6	55.4
Piazzi VI. 303	6 55 23.95	11	+0.63	−52.44	295 48 55.0	54.2
γ Canis Majoris	7 0 8.18	11	+0.53	−52.46	305 36 32.0	55.2
29 Canis Majoris	7 14	..	......	....	296 43 3.0	54.9
Piazzi VII. 85	7 18 8.65	11	+0.47	−52.45	312 18 15.7	54.9
4 Navis	7 42 14.98	11	+0.52	−52.51	306 46 24.2	54.9

h 5.608 ....*dt* .... s −52.482

Hourly rate .... +0.0105

Adopted Equator Point ....321° 5′ 54.74″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 21	30.39	20.1	19.0
6 22	30.385	18.8	17.8
7 20	30.385	18.2	17.8
7 45	30.385	18.2	17.9

Notes.
6. Images good.
30. Seeing pretty good.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. N. to 1900.0				
			302°	303°	304°	305°	306°	302°	303°	304°	305°	306°
°	s	h m	s	s	s	s	s	″	″	″	″	″
302	+0.564	5 30	−1.696	−1.708	−1.718	−1.730	−1.742	+13.55	+13.29	+13.02	+12.76	+12.49
303	0.554	6 0	1.864	1.875	1.885	1.895	1.906	14.65	14.40	14.15	13.90	13.64
304	0.546	6 30	2.027	2.037	2.047	2.055	2.065	15.62	15.39	15.16	14.92	14.68
305	0.536	7 0	2.184	2.192	2.200	2.208	2.215	16.46	16.25	16.04	15.83	15.61
306	+0.527	7 30	−2.330	−2.336	−2.344	−2.350	−2.356	+17.13	+16.95	+16.77	+16.58	+16.39

APPARENT RIGHT ASCENSION.	*R*				
	302°	303°	304°	305°	306°
h m	″	″	″	″	″
5 30	100.67	96.90	93.30	89.91	86.66
6 0	100.79	97.01	93.41	90.01	86.76
6 30	100.88	97.10	93.50	90.10	86.84
7 0	100.88	97.10	93.50	90.10	86.84
7 30	100.88	97.10	93.50	90.10	86.84

1900 MARCH 7. ZONE 194. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	7.5	51.3	53.5	55.5	57.	59.8	c	8 55.54	305 44 10.0	1.6	III B	44.690	6 8 54.04	−15 21 24.35	−15 1314
2	9.0	56.5	58.5	0.6	2.7	4.9	c	12 0.64	305 44 "	"	III A	43.890	6 11 59.12	15 15 11.06	15 1327
3	9.0	36.9	39.0	41.1	43.4	45.5	c	13 41.18	306 42 10.0	1.5	III A	42.210	6 13 39.63	14 17 40.53	14 1395
4	8.6	59.9	2.0	4.2	6.3	8.5	c	14 4.18	306 42 "	"	V	47.640	6 14 2.63	14 19 12.67	14 1397
5	8.2	15.0	17.3	19.2	21.6	23.7	c	15 19.36	306 0 10.0	1.6	III	46.760	6 15 17.82	15 1 30.12	15 1346
6	8.7	28.0	30.0	32.3	34.5	36.5	c	19 32.26	306 40 10.0	1.8	III B	42.500	6 19 30.68	14 26 3.25	14 1429
7	8.0	35.0	37.1	39.2	41.5	43.7	c	20 39.30	306 40 "	"	III	46.410	6 20 37.71	14 21 34.81	14 1436
8	8.3	39.6	41.7	43.8	46.0	48.0	c	24 43.82	306 50 10.0	2.0	III A	44.210	6 24 42.20	14 9 1.37	14 1467
9	8.5	10.6	12.7	14.8	17.0	19.1	c	25 14.84	306 50 "	"	III C	47.350	6 25 13.21	14 17 42.27	14 1471
10	8.3	33.1	35.2	37.4	39.5	41.6	c	27 37.36	306 56 10.0	1.0	III	50.870	6 27 35.72	−14 4 8.08	−14 1486
11	8.5	10.1	12.3	14.4	16.7	18.8	c	29 14.46	306 56 "	"	III	45.260	6 29 12.81	−14 5 56.37	−14 1493
12	8.1	1.3	3.4	5.5	......	......	c	31 5.58	305 6 10.0	0.5	III	46.570	6 31 3.95	15 55 36.35	15 1446
13	9.0	3.4	5.4	7.1	9.1	11.4	a	32 36.88	306 58 10.0	1.0	I C	45.155	6 32 35.21	14 10 23.38	14 1511¹
14	9.0	33.0	35.0	37.2	39.3	41.3	c	32 37.16	306 58 "	"	....	....	6 32 35.49	14 10 28	14 1511²
15	8.3	30.1	32.3	34.5	36.7	38.8	c	33 34.48	306 58 "	"	III A	45.280	6 33 32.81	14 0 40.71	13 1580
16	8.2	50.9	53.1	55.3	57.4	59.6	c	34 55.26	305 0 10.0	1.1	III	45.060	6 34 53.61	16 2 5.34	15 1464
17	8.8	27.9	30.0	34.4	35.9	38.6	$c_4 d_3$	36 25.75	305 22 10.0	0.8	V	44.470	6 36 24.09	15 40 16.94	15 1474
18	8.5	31.5	33.7	35.9	38.0	40.1	c	41 35.84	306 48 10.0	1.5	III A	41.770	6 41 34.12	14 11 47.74	14 1575
19	6.0	14.7	16.9	19.0	21.2	23.3	c	42 19.02	306 48 "	"	III B	39.110	6 42 17.30	14 19 6.77	14 1584
20	8.8	36.5	38.6	40.4	42.3	44.5	a	45 10.04	307 6 10.0	2.0	I	47.880	6 45 8.30	−13 55 4.54	−13 1674

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
21	8.0	29.3	31.5	33.5	35.7	37.8	c	45 33.56	306 42 10.0	2.1	III	47.920	6 45 31.82	−14 19 4.68	−14 1605
22	9.2	23.8	25.9	27.6	29.6	32.0	a	46 57.60	305 22 10.0	2.0	I	44.795	6 46 55.88	15 40 7.02	15 1542
23	9.1	4.0	6.2	8.4	10.6	12.7	c	47 8.38	305 22 "	"	III B	47.120	6 47 6.66	15 42 37.26	15 1543
24	7.9	10.2	12.2	14.4	16.7	18.6	c	50 14.42	307 0 10.0	1.5	III	45.925	6 50 12.65	14 1 42.51	13 1722
25	8.0	51.5	53.7	55.8	58.0	0.3	c	53 55.86	305 10 10.0	1.8	III B	45.390	6 53 54.09	15 55 11.05	15 1581
26	8.0	32.5	34.8	37.0	39.0	41.2	c	58 36.90	305 10 "	"	III	46.525	6 58 35.11	15 51 35.62	15 1617
27	9.0	37.4	39.6	41.7	43.9	46.0	c	59 41.72	305 52 10 0	1.4	III	43.025	6 59 39.91	15 10 40.93	15 1629
28	9.1	19.3	21.4	23.7	25.9	28.0	c	0 23.66	307 0 10.0	2.0	III	46.080	7 0 21.83	14 1 38.99	13 1807
29	8.7	24.0	26.0	28.2	30.4	32.5	c	4 28.22	306 14 10.0	2.4	III	46.010	7 4 26.38	14 47 42.07	14 1732
30	8.9	12.5	14.5	16.7	18.9	20.9	c	5 16.70	306 14 "	"	III B	39.885	7 5 14.86	−14 52 52.48	−14 1739
31	8.6	0.0	2.1	4.2	6.5	8.5	c	7 4.26	306 14 "	"	III B	45.795	7 7 2.41	−14 50 59.61	−14 1760
32	9.2	56.0	57.9	0.1	2.5	4.5	c	10 0.20	307 4 10.0	0.9	III	44.940	7 9 58.33	13 58 1.02	13 1895
33	9.0	38.3	40.6	42.7	44.9	47.0	c	11 42.70	306 20 10.0	1.9	III	48.640	7 11 40.82	14 40 51.10	14 1798
34	8.8	54.6	56.8	58.8	1.2	3.2	c	11 58.92	306 20 "	"	V	45.600	7 11 57.04	14 41 51.00	14 1803
35	8.7	6.2	8.3	10.5	12.7	14.8	c	14 10.50	306 58 10.0	2.0	III	45.770	7 14 8.60	14 3 44.65	13 1935
36	8.4	10.0	12.3	14.4	16.6	18.6	c	15 14.38	305 58 10.0	2.0	III	43.330	7 15 12.48	15 4 34.11	14 1834
37	9.2	38.2	40.2	42.3	44.6	46.6	c	18 42.38	306 22 10.0	2.0	III	44.820	7 18 40.45	14 40 4.40	14 1873
38	8.2	29.8	31.9	34.0	36.3	38.3	c	19 34.06	306 22 "	"	V A	44.060	7 19 32.13	14 37 5.34	14 1880
39	8.0	48.7	50.7	52.5	54.3	56.6	a	21 22.14	307 4 9.8	0.2	I	42.470	7 21 20.19	13 58 46.92	13 2008
40	8.9	24.8	27.0	29.0	31.3	33.3	c	21 29.08	307 4 "	"	V A	41.480	7 21 27.13	−13 55 53.62	−13 2009
41	8.2	15.8	18.0	20.0	22.2	24.4	c	25 20.08	306 54 10.0	3.4	III	41.430	7 25 18.11	[−14 9 6.81]	−14 1928
42	9.4	59.0	1.2	3.1	......	7.5	c	28 3.26	306 50 10.0	1.5	III	47.610	7 28 1.28	14 11 9.42	14 1956
43	8.8	34.7	36.9	38.9	43.1	44.6	c_3 d_2	31 34.63	306 36 10.0	1.9	VI B	47.160	7 31 32.64	14 28 34.00	14 2001
44	9.0	25.6	27.6	29.5	31.5	33.6	a	35 59.19	306 36 "	"	I	48.860	7 35 57.18	−14 24 44.05	−14 2084

Reduction Elements. Zone 194.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 7.3....	−0.122	+0.028	+0.482	−0.118	+0.020	+0.486
7.4....	−0.115	+0.012	+0.491			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	γ Leporis		κ Orionis		δ Leporis		η Leporis		Piazzi VII. 116		Lalande 14810	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	298 34 4.15		311 20 5.50		300 10 4.35		306 50 5.45		309 40 5.90		298 58 4.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.850	4 26.67	43.545	4 20.45	42.250	3 56.12	47.690	5 39.80	46.925	5 25.39	43.795	4 25.38
II Red. to Mer......	.960	5.22	.585	5.09	.320	5.20	.740	5.13	.970	5.10	.850	5.22
VI Inclination	44.055		.760		.480		.860		47.130		44.030	
VII Refraction	.100	1 49.0	.775	1 7.7	.510	1 42.3	.895	1 19.4	.170	1 12.2	.020	1 48.0

	26 Monocerotis		4 Navis	
	° ′ ″		° ′ ″	
CIRCLE READING.	311 42 5.45		306 42 6.10	
	r	′ ″	r	′ ″
I Microm. Eq......	47.270	5 31.24	47.300	5 32.33
II Red. to Mer......	.280	5.08	.345	5.13
VI Inclination	.420		.500	
VII Refraction	.440	1 7.3	.490	1 20.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Leporis...........	5 40	..	....	....	298 36 47.0	54.0
κ Orionis...........	5 43 2.25	11	+0.26	0.00	311 23 23.3	53.3
δ Leporis...........	5 47 2.49	11	+0.34	0.00	300 12 23.4	53.8
η Leporis...........	5 51 52.40	11	+0.29	0.00	306 54 31.0	53.8
Piazzi VII. 116	7 23 11.60	11	+0.28	−0.07	309 44 24.2	54.4
Lalande 14810.....	7 29 48.16	11	+0.34	−0.02	299 0 47.4	54.1
26 Monocerotis	7 36 30.24	11	+0.26	−0.07	311 46 34.5	55.1
4 Navis.............	7 41 22.59	11	+0.29	−0.01	306 46 23.2	54.8

h ... s
5.787...........*dt* 0.000
Hourly rate .... −0.0239

Adopted Equator Point .... 321° 5′ 54.″16

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
5 45	30.175	42.1	40.6
6 38	30.23	40.3	39.3
7 39	30.22	38.7	38.1

Note.
2. Thin clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0				D = Z. D. N. to 1900.0				R			
			305°	306°	307°	308°	305°	306°	307°	308°	305°	306°	307°	308°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
305	+0.303	6 0	−1.736	−1.747	−1.759	−1.771	+14.49	+14.22	+13.94	+13.66	85.33	82.24	79.32	76.51
306	0.297	6 30	1.904	1.914	1.925	1.937	15.64	15.38	15.12	14.85	85.51	82.41	79.49	76.66
307	0.290	7 0	2.069	2.078	2.086	2.096	16.66	16.41	16.17	15.93	85.68	82.58	79.65	76.82
308	+0.285	7 30	2.224	2.232	2.239	2.248	17.51	17.29	17.08	16.85	85.78	82.68	79.74	76.91
		8 0	−2.370	−2.377	−2.383	−2.389	+18.22	+18.02	+17.83	+17.63	85.90	82.79	79.86	77.02

1900 MARCH 16. ZONE 195. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.1	16.5	18.7	20.9	23.0	25.2	c	57 20.86	304 6 10.0 1.4	III 46.040	6 57 17.96	−16 55 50.06	−16 1714
2	9.1	35.2	37.4	39.5	41.5	44.0	c	58 39.52	305 6 10.0 1.3	III C 45.370	6 58 36.60	16 2 26.26	15 1618
3	8.1	30.8	33.0	35.0	37.3	39.3	c	2 35.08	304 20 10.0 3.5	III 45.690	7 2 32.13	16 41 54.86	16 1774
4	6.8	1.8	4.0	6.1	8.3	10.5	c	5 6.14	304 58 10.0 2.3	V 44.140	7 5 3.17	16 4 24.56	16 1802
5	8.7	49.9	52.0	54.2	56.5	58.6	c	9 54.24	305 42 10.0 1.3	III 42.685	7 9 51.22	15 20 49.35	15 1714
6	6.0	41.4	43.6	45.7	47.9	50.1	c	11 45.74	305 42 " "	III B 41.220	7 11 42.71	15 24 30.67	15 1734
7	8.7	11.9	13.9	16.1	18.4	20.5	c	14 16.16	305 42 " "	III A 44.050	7 14 13.11	15 17 8.09	15 1753
8	8.8	44.7	46.8	48.9	51.3	53.3	c	15 49.00	304 12 10.0 3.4	III 42.620	7 15 45.96	16 50 53.78	16 1905
9	8.9	51.4	53.4	55.6	57.6	59.9	c	19 55.58	305 10 10.0 2.8	III 45.030	7 19 52.51	15 52 4.96	15 1805
10	7.0	30.4	32.6	34.7	36.8	39.0	c	21 34.70	305 34 10.0 1.6	III 45.725	7 21 31.60	−15 27 51.03	−15 1820
11	8.7	15.0	17.3	19.4	21.7	23.8	c	22 19.44	305 16 10.0 3.3	III A 48.820	7 22 16.33	−15 41 36.25	−15 1825
12	9.2	47.4	49.6	51.9	54.0	56.4	c	23 51.86	305 16 " "	III 43.530	7 23 48.75	15 46 33.07	15 1843
13	8.3	6.6	8.6	10.7	13.0	15.0	c	26 10.78	305 16 " "	III 42.380	7 26 7.65	15 46 54.94	15 1868
14	8.7	33.4	35.5	37.6	39.7	42.0	(c)	27 37.64	305 16 " "	(III) C 47.890	7 27 34.51	15 51 35.44	15 1884
15	9.1	44.9	47.0	49.1	51.3	53.5	c	28 49.16	305 16 " "	III B 42.010	7 28 46.03	15 50 15.42	15 1895
16	8.5	9.1	11.2	13.3	15.6	17.7	c	32 13.38	305 16 " "	III B 49.410	7 32 10.21	15 47 53.13	15 1930
17	9.0	0.4	2.5	4.7	7.0	9.1	c	33 4.74	305 42 10.0 2.0	III B 48.105	7 33 1.56	15 22 17.76	15 1942
18	8.9	21.6	24.0	25.9	30.0	31.7	c_3 d_2	33 21.61	305 42 " "	V 48.810	7 33 18.43	15 18 51.93	15 1945
19	8.5	3.3	5.3	7.6	9.8	11.9	c	37 7.58	304 58 10.0 3.0	III 45.775	7 37 4.38	16 3 50.72	15 1981
20	8.1	58.1	0.2	2.5	4.6	6.8	c	38 2.44	305 18 10.0 1.5	III 48.280	7 37 59.23	−15 43 2.17	−15 1992
21	9.3	34.1	36.2	38.2	40.4	42.5	c	39 38.28	304 58 10.0 3.0	III 46.420	7 39 35.07	−16 3 38.25	−15 2007
22	8.6	25.7	27.8	30.0	32.2	34.4	c	40 30.02	304 58 " "	III 45.430	7 40 26.81	16 3 57.30	15 2017
23	9.0	50.1	52.3	54.5	56.8	58.9	c	42 54.52	304 48 10.0 3.0	III 47.040	7 42 51.29	16 13 26.72	16 2127
24	8.8	10.0	12.1	14.3	16.6	18.7	c	49 14.34	305 8 10.0 2.6	III 46.250	7 49 11.07	15 53 41.03	15 2114
25	9.0	6.2	8.3	10.5	12.7	14.8	c	52 10.50	304 32 10.0 3.1	III 44.430	7 52 7.21	16 30 17.49	16 2204
26	8.7	48.9	51.0	53.0	55.3	57.5	c	53 53.14	305 34 10.0 1.5	III 42.340	7 53 49.82	15 28 55.13	15 2157
27	8.0	18.2	20.4	22.5	24.8	26.9	c	56 22.56	305 34 " "	III 46.100	7 56 19.23	15 27 43.06	15 2190
28	8.5	10.0	12.2	14.2	16.6	18.7	c	59 14.34	304 48 10.0 3.1	III 43.415	7 59 11.00	16 14 35.98	16 2266
29	8.6	36.4	38.5	40.7	42.8	45.0	c	59 40.68	304 48 " "	III 47.900	7 59 37.33	16 13 9.75	16 2271
30	9.3	50.0	52.2	54.4	56.6	58.7	c	1 54.38	303 58 10.0 2.9	III 46.480	8 1 51.03	−17 3 39.76	−16 2289
31	9.3	29.8	31.9	34.0	36.3	38.5	c	2 34.10	304 44 10.0 1.9	III 45.550	8 2 30.74	−16 17 55.80	−16 2306
32	8.8	14.3	16.5	18.7	20.8	23.0	c	6 18.66	304 44 " "	III 48.715	8 6 15.27	16 16 54.68	16 2331
33	9.1	38.9	41.0	43.0	45.3	47.4	c	8 43.12	305 16 10.0 2.3	III 45.845	8 8 39.71	15 45 48.22	15 2323
34	8.8	52.3	54.5	56.6	58.9	0.9	c	9 56.64	305 34 10.0 2.4	III 44.220	8 9 53.21	15 28 18.49	15 2337
35	8.7	27.5	29.7	31.7	34.0	36.0	c	11 31.78	303 58 10.0 3.0	III 47.200	8 11 28.37	17 3 25.68	16 2373
36	8.6	15.7	17.9	19.6	21.5	23.9	a	12 49.59	304 54 10.0 2.7	I 45.560	8 12 46.16	16 7 53.05	16 2382
37	9.0	37.6	39.7	42.0	44.0	46.3	c	15 41.92	305 50 10.0 2.1	III B 42.880	8 15 38.46	15 15 56.88	15 2382
38	8.2	17.2	19.2	21.5	23.6	25.7	c	16 21.44	305 50 " "	III 44.630	8 16 17.97	15 12 9.89	15 2388
39	8.5	54.5	56.7	58.8	1.0	3.1	c	19 58.82	305 50 " "	III B 47.930	8 19 55.32	15 14 19.81	15 2419
40	8.8	9.9	12.0	14.1	16.4	18.6	c	22 14.20	305 50 " "	III B 44.770	8 22 10.69	−15 15 20.62	−15 2438
41	8.1	24.6	26.8	28.8	31.0	33.2	c	24 28.88	305 50 " "	III 46.100	8 24 25.36	−15 11 41.54	−15 2455
42	8.4	56.0	58.1	0.0	1.9	4.1	a	26 29.76	305 50 " "	I 42.340	8 26 26.23	15 12 52.05	15 2474
43	8.6	45.7	47.7	50.0	52.2	54.3	c	28 49.98	304 22 10.0 2.9	III 47.565	8 28 46.45	−16 39 17.20	−16 2504

Reduction Elements. Zone 195.

	OBSERVED.			ADOPTED.		
1900.	c	b	a	c	b	a
	s	s	s	s	s	s
March 16.3....	−0.169	+0.097	+0.623	−0.173	+0.089	+0.639
16.4....	−0.177	+0.081	+0.655			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	θ Canis Majoris		19 Canis Majoris		Piazzi VI. 303		Piazzi VII. 85		Lalande 16304		Piazzi VIII. 95	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	309 8 5.30		301 2 5.25		295 46 4.55		312 14 6.65		308 44 6.00		301 48 6.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq.	42.290	3 56.48		4 36.22	45.070	4 49.33		5 11.75		5 6.71	44.515	4 38.60
II | Red. to Mer.	.365	5.11	44.360	5.17	.140	5.25		5.08	45.970	5.10	.520	5.18
VI | Inclination	.470		.580	−0.64	.250		46.320	−1.61	46.105	−0.64	.705	
VII | Refraction	.510	1 14.0	.530	1 39.9	.235	2 4.3	.360	1 6.4	.160	1 15.5	.715	1 37.7

	Bradley 1212		6 Hydrae	
	° ′ ″		° ′ ″	
CIRCLE READING.	313 24 6.00		308 54 6.00	
	r	′ ″	r	′ ″
I | Microm. Eq.	43.195	4 14.15	46.825	5 22.24
II | Red. to Mer.	.275	5.07	.880	5.10
VI | Inclination	.395		.950	0.64
VII | Refraction	.480	1 4.2		1 15.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
θ Canis Majoris	6 49 35.61	11	−0.39	−1.49	309 10 52.9	56.2
19 Canis Majoris	6 51 19.99	11	−0.45	−1.37	301 5 6.1	56.1
Piazzi VI. 303	6 54 32.74	11	+0.49	−1.42	295 48 54.8	55.6
Piazzi VII. 85	7 17 17.53	8	+0.36	−1.49	312 18 15.5	55.8
Lalande 16304	8 13 42.71	11	+0.39	−1.58	308 48 1.7	56.5
Piazzi VIII. 95	8 27 4.74	11	+0.44	−1.52	301 51 12.6	54.9
Bradley 1212	8 30 39.05	11	−0.36	−1.59	313 27 21.0	55.3
6 Hydrae	8 35 20.79	11	−0.39	−1.57	308 58 18.8	56.0

h 6.972 .... *dt* .... s −1.442

Hourly rate .... −0.0835

Adopted Equator Point .... 321° 5′ 55.″80

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 46	29.615	28.3	26.8
7 44	29.650	26.2	25.1
8 33	29.68	24.8	23.8

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0			*D* = Z. D. N. to 1900.0			*R*		
			304°	305°	306°	304°	305°	306°	304°	305°	306°
°	s	h m	s	s	s	″	″	″	″	″	″
304	+0.425	6 30	−1.723	−1.735	−1.747	+16.23	+15.97	+15.69	89.27	86.00	82.91
305	0.417	7 0	1.898	1.907	1.919	17.40	17.14	16.87	89.50	86.22	83.12
306	+0.410	7 30	2.068	2.076	2.085	18.39	18.16	17.91	89.72	86.44	83.33
		8 0	2.232	2.239	2.247	19.22	19.00	18.78	89.95	86.66	83.54
		8 30	−2.386	−2.391	−2.396	+19.84	+19.64	+19.45	90.16	86.86	83.73

1900 MARCH 17. ZONE 196. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.5	35.6	37.7	39.9	42.1	44.3	c	57 39.92	304 26 10.0	1.6	III B	45.860	6 57 36.40	−16 39 8.62	−16 1716
2	7.7	19.9	21.9	24.0	26.4	28.5	c	58 24.14	304 26 "	"	III A	44.130	6 58 20.61	16 33 13.27	16 1723
3	8.9	47.9	50.0	58.5	20.1	22.0	c_2 e_4	58 50.05	304 26 "	"	III A	41.525	6 58 46.52	16 34 2.94	16 1729
4	9.4	59.4	1.3	3.3	5.0	7.6	a	1 33.16	305 8 10.0	2.0	I	44.550	7 1 29.60	15 54 16.38	15 1643[1]
5	9.4	30.5	32.5	34.7	37.0	39.2	c	1 34.78	305 8 "	"	III	44.950	7 1 31.22	15 54 10.19	15 1643[2]
6	9.2	15.9	18.0	19.9	21.9	23.8	e	1 49.96	303 58 10.0	1.6	VII	46.915	7 1 46.41	17 3 38.50	16 1763
7	8.6	18.8	21.0	23.0	25.3	27.4	c	4 23.10	302 56 10.0	2.0	III	43.690	7 4 19.56	18 6 41.21	18 1701
8	8.3	38.1	40.3	42.3	44.6	46.9	c	17 42.44	303 30 10.0	1.7	III C	46.540	7 17 38.81	17 38 10.69	17 1935
9	8.2	36.6	38.7	40.6	42.4	44.8	a	21 10.71	303 30 "	"	I	47.690	7 21 7.06	17 31 20.56	17 1967
10	8.2	21.3	23.4	25.7	27.9	30.0	c	21 25.66	304 2 10.0	2.9	III	44.695	7 21 21.99	−17 0 17.39	−16 1955
11	9.1	25.0	27.0	29.3	31.5	33.7	c	23 29.30	304 52 10.0	2.7	III	42.840	7 23 25.61	−16 10 50.33	−16 1963
12	8.1	28.6	30.7	32.8	35.2	37.3	c	25 32.92	303 20 10.0	3.3	III C	48.500	7 25 29.25	17 47 32.37	17 2004
13	8.5	6.4	8.6	10.7	12.9	15.2	c	26 10.76	303 20 "	"	III A	47.510	7 26 7.08	17 38 10.07	17 2007
14	8.7	39.8	42.0	44.0	46.4	48.7	c	26 44.18	303 20 "	"	III (C)	47.400	7 26 40.50	17 47 53.59	17 2014
15	8.2	6.0	8.2	10.4	12.6	14.7	c	28 10.38	304 26 10.0	2.3	III	42.970	7 28 6.67	16 36 49.23	16 2006
16	8.6	12.6	14.8	16.8	19.0	21.2	c	29 16.88	303 14 10.0	3.3	III	44.455	7 29 13.18	17 48 24.18	17 2033
17	9.0	34.4	36.7	38.8	41.0	43.1	c	32 38.80	304 44 10.0	2.4	III	41.770	7 32 35.06	−16 19 11.02	−16 2047

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
18	7.3	9.0	11.1	13.3	15.5	17.7	c	35 13.32	303 22	10.0	2.0	III	50.400	7 35 9.59	−17 38 29.54	−17 2081
19	9.2	58.1	0.4	2.3	4.8	7.0	c	36 2.52	303 22	"	"	III B	45.050	7 35 58.79	17 43 26.30	17 2092
20	9.1	52.5	54.7	56.9	59.2	1.5	c	37 56.96	303 0	11.0	3.5	III	47.040	7 37 53.22	−18 1 34.42	−17 2108
21	8.0	36.3	38.5	40.4	42.4	44.1	(e)	40 10.40	304 0	10.0	2.6	III	42.430	7 40 6.63	−17 3 0.46	−16 2105
22	8.5	54.8	57.0	59.1	1.5	3.6	c	41 59.20	302 46	10.0	3.3	III	47.460	7 41 55.44	18 15 27.60	18 2013
23	8.8	57.0	59.3	1.5	3.6	5.8	c	44 1.44	303 48	10.9	3.3	III	45.870	7 43 57.65	17 13 54.31	17 2165
24	8.7	1.0	3.1	5.3	7.6	9.8	c	49 5.36	304 4	10.0	2.2	III	45.900	7 49 1.54	16 57 53.76	16 2178
25	8.9	53.0	55.2	57.4	59.7	1.9	c	49 57.44	303 36	10.7	4.3	III C	45.850	7 49 53.63	17 32 21.14	17 2222
26	8.9	57.6	59.7	1.8	4.0	6.3	c	52 1.88	303 36	"	"	III A	41.010	7 51 58.06	17 24 12.19	17 2239
27	8.3	12.0	14.1	16.4	18.7	20.9	c	53 16.42	303 18	10.0	2.1	III	47.370	7 53 12.58	17 43 27.89	17 2249
28	8.3	25.0	27.0	29.2	31.4	33.7	c	54 29.26	304 22	10.0	2.6	III	46.510	7 54 25.40	16 39 40.74	16 2225
29	7.8	49.0	51.3	53.4	55.7	57.8	c	55 53.44	303 18	10.0	3.2	III	46.325	7 55 49.59	17 43 47.43	17 2274
30	8.8	27.0	29.1	31.3	33.6	35.6	c	57 31.32	302 54	10.0	2.8	III C	47.870	7 57 27.46	−18 13 45.49	−18 2134
31	8.2	56.0	58.3	0.4	2.7	4.8	c	1 0.44	302 54	10.0	2.5	III	45.575	8 0 56.56	−18 8 3.47	−18 2162
32	8.0	47.1	49.4	51.6	53.9	56.0	c	1 51.60	302 54	"	"	III A	44.490	8 1 47.71	18 5 9.20	17 2331
33	8.8	10.8	12.9	15.0	17.3	19.4	c	5 15.08	303 4	10.0	2.0	III C	44.160	8 5 11.18	18 4 56.61	17 2362
34	8.8	25.9	28.2	30.1	32.4	34.7	c	5 30.26	303 4	"	"	VI B	46.275	8 5 26.35	[18 1 5.17]	17 2367
35	8.9	3.3	5.6	7.7	12.1	13.8	$c_3 d_2$	7 3.41	303 4	"	"	VI A	43.640	8 6 59.50	17 55 27.19	17 2383
36	9.0	6.7	9.0	11.0	13.2	15.3	c	9 11.04	303 40	10.0	2.8	III	45.560	8 9 7.11	17 22 0.89	17 2397
37	8.2	25.6	27.8	29.9	32.0	34.3	c	9 29.92	303 40	"	"	V	46.380	8 9 25.99	17 21 46.38	17 2399
38	8.9	42.7	45.0	47.1	49.5	51.6	c	11 47.18	303 40	"	"	III	43.180	8 11 43.24	17 22 46.47	17 2418
39	......	56.0	58.0	0.2	2.5	4.7	c	16 0.28	304 8	10.0	2.8	VI	48.450	8 15 56.30	16 53 5.36	16 2403
40	8.6	19.5	21.8	23.7	26.0	28.1	c	19 23.82	304 16	10.0	3.0	III	45.030	8 19 19.82	−16 46 8.85	−16 2427
41	7.0	5.6	7.7	9.8	11.9	14.0	c	21 9.80	303 56	10.0	2.3	III	43.110	8 21 5.80	−17 6 47.03	−16 2442
42	8.8	54.3	56.5	58.6	0.9	3.0	c	23 58.66	303 56	"	"	III A	42.470	8 23 54.64	17 3 44.11	16 2464
43	8.9	46.4	48.4	50.4	52.3	54.5	a	26 20.53	303 16	10.0	3.0	I	45.050	8 26 16.51	17 46 10.17	17 2528
44	9.0	51.8	53.8	55.8	57.7	0.0	a	29 26.01	302 56	10.0	1.9	I	46.300	8 29 21.98	−18 5 47.77	−17 2553

Reduction Elements. Zone 196.

	OBSERVED.			ADOPTED.		
1900.	c	b	a	c	b	a
	s	s	s	s	s	s
March 17.3....	−0.162	+0.069	+0.674	−0.181	+0.088	+0.683
17.4....	−0.200	+0.108	+0.692			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	θ Canis Majoris		19 Canis Majoris		Piazzi VI. 303		29 Canis Majoris		Lalande 16304		Piazzi VIII. 95	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	309 8 6.30		301 2 5.90		295 46 5.75		296 40 5.85		308 44 6.50		301 48 5.70	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42.320	3 57.08	44.410	4 36.72	45.145	4 51.33	45.305	4 54.15	46.010	5 7.70	44.730	4 42.56
II Red. to Mer......	.370	5.11	.435	5.19	.220	5.25	.380	5.24	.060	5.11	.750	5.18
VI Inclination......	.500		.595		.345		.480		.230		.880	
VII Refraction.......	.570	1 16.1	.625	1 42.7	.400	2 7.8	.535	2 3.0	.220	1 17.4	.925	1 40.2

	Bradley 1212		6 Hydrae	
	° ′ ″		° ′ ″	
CIRCLE READING.	313 24 8.50		308 54 6.65	
	r	′ ″	r	′ ″
I Microm. Eq......		4 15.56	46.930	5 25.29
II Red. to Mer......	43.320	5.07	.955	5.11
VI Inclination......	.450	−0.64	47.150	
VII Refraction.......	.460	1 5.8	.140	1 17.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
θ Canis Majoris.....	6 49 36.15	11	+0.41	−2.07	309 10 52.4	55.8
19 Canis Majoris.....	6 51 20.66	11	+0.48	−2 09	301 5 5.1	55.1
Piazzi VI. 303.....	6 54 33.32	11	+0.52	−2.06	295 48 54.5	55.4
29 Canis Majoris.....	7 14 34.14	11	+0.51	−2.23	296 43 2.2	56.0
Lalande 16304.....	8 13 43.16	11	+0.42	−2.08	308 48 1.9	56.8
Piazzi VIII. 95....	8 27 5.29	11	+0.47	−2.11	301 51 13.2	55.6
Bradley 1212......	8 30 39.58	11	+0.38	−2.16	313 27 22.7	57.0
6 Hydrae...........	8 35 21.35	11	+0.42	−2.18	308 58 20.0	57.3

h 6.960....	.......*dt*....................	s −2.112
	Hourly rate	−0.0141
	Adopted Equator Point........	° ′ ″ 321 5, 56.13

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 45	29.91	19.8	18.2
7 45	29.92	18.4	17.5
8 33	29.93	17.4	16.4

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					$D =$ Z. D. N. to 1900.0				
			302°	303°	304°	305°	306°	302°	303°	304°	305°	306°
°	s	h m	s	s	s	s	s	″	″	″	″	″
302	−0.471	6 30	−1.674	−1.687	−1.698	−1.711	−1.722	+16.80	+16.55	+16.28	+16.01	+15.73
303	0.462	7 0	1.853	1.862	1.875	1.884	1.895	17.96	17.71	17.46	17.20	16.94
304	0.454	7 30	2.028	2.036	2.046	2.055	2.064	18.94	18.70	18.46	18.23	17.97
305	0.447	8 0	2.197	2.205	2.211	2.219	2.226	19.73	19.49	19.29	17.07	18.84
306	−0.438	8 30	−2.358	−2.363	−2.368	−2.373	−2.378	+20.30	+20.11	+19.92	+19.72	+19.52

APPARENT RIGHT ASCENSION.	*R*				
	302°	303°	304°	305°	306°
h m	″	″	″	″	″
6 30	99.15	95.43	91.90	88.55	85.35
7 0	99.27	95.54	92.00	88.65	85.45
7 30	99.38	95.65	92.11	88.76	85.55
8 0	99.50	95.76	92.21	88.86	85.64
8 30	99.66	95.92	92.36	89.00	85.78

1900 MARCH 21. ZONE 197. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.4	1.3	3.2	5.0	6.9	9.4	a	1 35.00	305 8 10.0 0.1	I 44.330	7 1 29.70	−15 54 18.50	−15 1643¹
2	9.5	32.1	34.4	36.5	38.7	41.0	c	1 36.54	305 8 " "	III 44.910	7 1 31.24	15 54 8.85	15 1643²
3	8.0	33.4	35.6	37.6	39.8	41.9	c	19 37.66	306 24 10.0 0.9	III 48.040	7 19 32.21	14 37 3.96	14 1880
4	8.6	48.9	51.0	53.2	55.4	57.5	c	21 53.20	306 16 10.0 1.4	III 43.490	7 21 47.74	14 46 31.49	14 1896
5	8.4	23.2	25.3	27.4	29.7	31.9	c	23 27.50	305 52 10.0 1.0	III 42.260	7 23 22.04	15 10 56.22	15 1839
6	8.8	21.0	23.1	25.2	27.6	29.6	c	26 25.30	306 2 10.0 0.8	III 42.420	7 26 19.82	15 0 52.68	14 1939
7	9.0	38.4	40.6	42.8	45.0	47.1	c	26 42.78	306 2 " "	V C 47.090	7 26 37.29	15 5 50.22	15 1873
8	8.6	5.5	7.6	9.8	11.9	14.1	c	29 9.78	305 32 10.0 1.0	III 42.985	7 29 4.28	15 30 43.13	15 1899
9	7.9	19.5	21.5	23.7	25.8	27.8	c	30 23.66	307 8 10.0 0.1	V B 46.930	7 30 18.13	13 56 38.36	13 2104
10	8.4	4.0	6.1	8.3	10.4	12.7	c	35 8.30	305 14 10.0 29.4	III 45.690	7 35 2.77	−15 47 52.77	−15 1965
11	8.5	48.7	50.9	53.1	55.2	57.3	c	36 53.04	306 24 10.0 1.6	III A 43.695	7 36 47.48	−14 35 11.57	−14 2112
12	8.7	14.7	16.9	19.0	21.1	23.4	c	38 19.02	306 24 " "	III 46.630	7 38 13.44	14 37 30.21	14 2166
13	8.7	19.8	21.8	24.1	26.2	28.4	c	39 24.06	305 0 10.0 0.7	III 47.200	7 39 18.50	16 1 23.56	15 2004
14	9.1	50.3	52.5	54.6	56.7	58.8	c	41 54.58	305 44 10.0 0.4	III 46.700	7 41 48.99	15 17 31.18	15 2035
15	8.6	1.1	3.2	5.4	7.8	9.8	c	44 5.46	305 44 " "	III 41.500	7 43 59.86	15 19 10.67	15 2059
16	9.3	40.3	42.5	44.6	46.8	49.0	c	45 44.64	305 44 " "	III 48.100	7 45 39.03	15 17 4.05	15 2077
17	8.2	40.0	42.2	44.4	46.6	48.7	c	49 44.38	306 46 10.0 1.8	III 46.130	7 49 38.73	14 15 38.41	14 2268
18	8.4	50.7	52.8	55.0	57.3	59.4	c	50 55.04	306 30 10.0 1.7	III A 48.890	7 50 49.38	14 27 30.80	14 2275
19	8.2	37.6	39.7	41.8	44.0	46.2	c	51 41.86	306 30 " "	III C 46.150	7 51 36.20	14 38 4.98	14 2281
20	8.6	2.2	4.4	6.4	8.5	10.7	c	53 6.44	306 58 10.0 2.1	III 47.880	7 53 0.77	−14 3 3.87	−13 2319
21	7.8	2.6	4.9	6.9	9.2	11.3	c	57 6.98	306 32 10.0 1.0	III 48.235	7 57 1.29	−14 28 58.61	−14 2332
22	8.8	1.1	3.1	5.3	7.5	9.7	c	58 5.34	306 2 10.0 1.6	III 46.110	7 57 59.65	14 59 40.63	14 2341
23	9.1	44.9	46.9	48.7	50.6	52.8	a	0 18.49	306 2 " "	I 42.150	8 0 12.78	15 0 54.93	14 2357
24	8.6	28.8	31.0	33.0	35.2	37.1	c	0 33.02	305 22 10.0 0.6	III A 41.200	8 0 27.32	15 38 1.81	15 2241
25	8.9	19.3	21.6	23.7	25.9	28.0	c	2 23.70	305 22 " "	III C 42.790	8 2 17.99	15 47 12.84	15 2260
26	8.3	57.0	59.0	0.9	2.6	4.9	a	6 30.46	306 56 10.0 29.9	I A 44.470	8 6 24.70	14 2 53.67	13 2421
27	9.0	35.4	37.5	39.6	41.9	44.0	c	6 39.68	306 56 " "	V 50.255	8 6 33.92	14 4 20.04	13 2425
28	7.7	23.0	25.0	27.0	28.9	30.8	e	6 57.42	306 56 " "	V B 47.590	8 6 51.66	14 8 25.18	14 2404
29	8.0	43.9	46.3	48.4	50.5	52.7	c	10 48.36	305 0 10.0 1.9	I C 48.365	8 10 42.60	16 7 24.86	15 2343
30	9.1	2.4	4.6	6.8	9.0	11.2	c	11 6.80	305 0 " "	V 43.690	8 11 1.03	−16 2 30.87	−15 2347
31	8.0	55.0	57.3	59.4	1.5	3.7	c	11 59.38	305 0 " "	III 49.250	8 11 53.61	−16 0 42.50	−15 2356
32	8.8	44.0	46.0	48.3	50.4	52.4	c	13 48.22	305 50 10.0 1.0	III 49.640	8 13 42.43	15 10 32.94	15 2370
33	8.0	26.5	28.7	30.8	33.0	35.0	c	15 30.80	306 44 10.0 1.0	III 45.145	8 15 24.99	14 17 57.19	14 2474
34	8.7	59.8	2.0	4.2	6.4	8.5	c	17 4.18	305 56 10.0 0.9	III 43.060	8 16 58.37	15 6 39.32	14 2487
35	8.7	14.3	16.5	18.6	21.1	23.0	c	20 18.70	305 6 10.0 0.4	III 41.620	8 20 12.87	15 57 9.34	15 2421
36	9.2	18.9	20.9	23.0	25.3	27.5	c	24 23.12	305 34 10.0 1.4	III 42.590	8 24 17.26	15 28 48.92	15 2453
37	8.1	16.6	18.7	20.5	22.5	24.7	a	25 50.31	306 0 10.0 1.7	I 45.210	8 25 44.44	15 1 55.92	14 2548
38	9.1	7.5	9.6	11.4	13.3	15.5	a	29 41.19	305 50 10.0 1.7	I 43.055	8 29 35.30	15 12 37.59	15 2502
39	9.3	46.3	48.4	50.5	52.7	54.9	c	33 50.56	305 18 10.0 0.2	III 43.650	8 33 44.65	15 44 29.91	15 2531
40	9.1	7.8	10.0	12.1	14.3	16.5	c	39 12.14	305 8 10.0 0.8	III 45.380	8 39 6.20	−15 53 56.86	−15 2568
41	8.6	32.6	34.9	36.9	39.1	41.3	c	40 36.96	305 26 10.0 0.8	III 44.875	8 40 31.01	−15 36 5.65	−15 2577

Reduction Elements. Zone 197.

1900.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
March 21.3....	−0.146	+0.076	+0.541	−0.160	+0.078	+0.514
21.4....	−0.173	+0.080	+0.488			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi VI. 303		γ Canis Majoris		29 Canis Majoris		Piazzi VII. 85		Piazzi VIII. 95		Bradley 1212	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	295 46 4.40		305 32 5.00		296 40 4.50		312 14 6.00		301 48 5.05		313 24 5.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.020	4 48 75	47.940	5 45.06	45.195	4 51.94	46.200	5 10.96	44.480	4 37.91	43.190	4 14.07
II Red. to Mer......	.085	5.25	.990	5.14	.250	5.24	.265	5.08	.500	5.18	.220	5.07
VI Inclination	.260		48.160		.365		.360		.660		.440	
VII Refraction.......	.210	2 4.4	.180	1 24.3	.430	1 59.6	.370	1 6.4	.670	1 37.2	.480	1 3.9

	6 Hydrae		Lalande 17333	
	° ′ ″		° ′ ″	
CIRCLE READING.	308 54 5.95		302 38 4.50	
	r	′ ″	r	′ ″
I Microm. Eq......	46.720	5 22.07	47.310	5 31.89
II Red. to Mer.	.780	5.11	.340	5.17
VI Inclination	47.010		.445	
VII Refraction.......	46.995	1 14.8	.450	1 34.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi VI. 303	6 54 35.34	11	+0.37	−4.01	295 48 54.0	55.2
γ Canis Majoris.....	6 59 19.33	11	+0.32	−3.77	305 36 30.9	55.6
29 Canis Majoris.....	7 14 35.66	11	+0.37	−3.69	296 43 2.1	56.3
Piazzi VII. 85......	7 17 19.78	11	+0.28	−3.75	312 18 15.6	56.2
Piazzi VIII. 95.....	8 27 7.07	11	+0.34	−3.82	301 51 10.9	53.8
Bradley 1212	8 30 41.42	11	+0.27	−3.94	313 27 20.5	55.1
6 Hydrae...........	8 35 23.16	11	+0.30	−3.92	308 58 18.3	56.0
Lalande 17333.....	8 42 17.95	11	+0.33	−3.87	302 42 7.4	57.6

h		s
7.108..	.........*dt*	−3.805
	Hourly rate	−0.0570

Adopted Equator Point ....321° 5′ 55.72″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 50	30.02	34.0	32.3
7 47	30.02	32.5	32.1
8 44	30.02	31.5	31.2

Notes.
1. Well seen.
17. Images good.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. N. to 1900.0				
			304°	305°	306°	307°	308°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	″	″	″	″	″
304	+0.325	7 0	−1.798	−1.809	−1.821	−1.831	−1.843	+17.77	+17.50	+17.23	+16.96	+16.69
305	0.318	7 30	1.975	1.985	1.994	2.004	2.011	18.83	18.58	18.32	18.06	17.80
306	0.313	8 0	2.148	2.155	2.162	2.170	2.179	19.72	19.49	19.25	19.01	18.76
307	0.306	8 30	2.311	2.317	2.323	2.329	2.334	20.40	20.19	19.98	19.75	19.54
308	+0.301	9 0	−2.466	−2.469	−2.473	−2.477	−2.481	+20.87	+20.67	+20.49	+20.29	+20.10

APPARENT RIGHT ASCENSION.	*R*				
	304°	305°	306°	307°	308°
h m	″	″	″	″	″
7 0	89.58	86.30	83.18	80.22	77.38
7 30	89.60	86.32	83.20	80.24	77.39
8 0	89.64	86.36	83.23	80.28	77.43
8 30	89.74	86.46	83.33	80.37	77.52
9 0	89.85	86.56	83.43	80.46	77.61

1900 MARCH 22. ZONE 198. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.3	24.5	26.6	28.6	30.9	33.0	c	25 28.72	306 54 10.0 0.4	III 42.435	7 25 22.88	−14 8 44.85	−14 1929
2	9.1	5.0	7.1	9.2	13.5	15.0	c_3 d_2	26 4.94	306 16 10.0 0.4	V 45.480	7 25 59.11	14 45 49.46	14 1935
3	8.3	54.2	56.0	57.0	59.7	1.9	a	31 27.60	306 32 10.0 0.2	I 46.710	7 31 21.73	14 29 22.28	14 1994
4	9.0	48.5	50.5	52.8	55.0	57.1	c	31 52.78	306 46 10.0 0.3	V 43.570	7 31 46.91	14 16 24.64	14 2012
5	9.0	30.2	32.4	34.5	36.2	38.2	e	32 4.77	306 46 " "	VII A 45.880	7 31 58.90	14 12 26.75	14 2019
6	9.4	12.1	14.3	16.4	18.7	20.8	c	36 16.46	306 46 " "	III 42.040	7 36 10.58	14 16 52.41	14 2089
7	8.7	22.8	24.9	27.2	29.2	31.4	c	38 27.10	306 16 10.0 1.0	III 45.365	7 38 21.21	14 45 49.70	14 2171
8	8.2	14.8	17.0	19.2	21.3	23.5	c	40 19.16	306 16 " "	III B 40.200	7 40 13.26	14 50 41.67	14 2190
9	......	45.3	47.3	49.5	51.7	53.8	c	41 49.52	306 16 " "	III B 44.860	7 41 43.61	14 49 12.77	14 2200
10	8.9	7.8	10.0	12.3	14.3	16.4	c	43 12.16	306 0 10.0 1.2	III B 40.410	7 43 6.24	−15 6 38.22	−15 2050
11	8.6	39.7	41.9	44.1	46.4	48.4	c	44 44.10	306 0 " "	III 42.405	7 44 38.17	−15 2 46.76	−14 2227
12	8.0	55.7	57.8	59.9	2.3	4.3	c	45 0.00	306 0 " "	V B 43.620	7 44 54.07	15 5 38.47	14 2229
13	8.4	35.0	37.1	39.3	41.4	43.6	c	46 39.28	306 0 " "	III A 42.310	7 46 33.34	14 59 33.49	14 2240
14	8.6	16.3	18.5	20.7	27.1	28.6	c_2 d_2	47 18.51	306 0 " "	III A 40.550	7 47 12.57	15 0 6.93	14 2245
15	9.6	39.3	41.7	43.6	45.9	48.1	c	6 43.72	305 4 10.0 29.2	III 43.190	8 6 37.70	15 58 34.85	15 2299
16	8.8	22.5	24.8	26.9	29.0	31.1	c	8 26.86	306 24 10.0 0.5	III 42.180	8 8 20.81	14 38 49.77	14 2422
17	8.8	11.2	13.3	15.5	17.6	19.8	c	10 15.48	306 2 10.0 0.7	III 43.190	8 10 9.42	15 0 31.35	14 2440
18	8.8	3.8	5.8	7.9	10.2	12.3	c	12 8.00	306 24 10.0 0.6	III 43.190	8 12 1.93	14 38 30.40	14 2452
19	8.0	8.1	10.2	12.3	14.5	16.7	c	16 12.36	307 0 10.0 0.7	III 42.090	8 16 6.26	14 2 49.68	13 2491
20	9.5	2.3	4.5	6.7	8.8	11.0	c	19 6.66	307 0 " "	III C 48.040	8 19 0.56	−14 7 21.69	−13 2514
21	8.6	30.9	33.0	35.1	37.4	39.5	c	26 35.18	305 30 10.0 29.6	III 43.180	8 26 29.06	−15 32 33.28	−15 2476
22	8.9	57.9	0.1	2.1	4.4	6.5	c	27 2.20	307 2 10.0 29.8	V 42.810	8 26 56.06	14 0 37.42	13 2572
23	8.5	43.9	46.0	47.9	49.6	52.0	a	30 17.47	307 2 " "	I C 44.565	8 30 11.31	14 6 27.72	13 2600
24	8.7	14.5	16.6	18.8	21.0	23.0	c	32 18.78	306 36 10.0 0.5	V 47.260	8 32 12.61	14 25 12.69	14 2588
25	9.0	1.7	4.1	16.9	19.5	21.2	a_4 b_3	34 29.65	306 14 10.0 0.7	I 42.780	8 34 23.47	14 48 36.75	14 2599
26	8.9	49.2	51.2	53.3	55.2	57.0	e	36 23.57	306 14 10.0 0.7	VII 42.860	8 36 17.38	14 48 39.08	14 2614
27	9.2	49.5	51.7	53.9	56.2	58.2	(c)	38 53.90	305 48 10.0 29.0	V 41.600	8 38 47.71	15 15 3.95	15 2565
28	8.0	37.1	39.3	41.5	43.7	45.8	c	44 41.48	305 50 10.0 0.0	III 46.200	8 44 35.27	−15 11 33.97	−15 2597

Reduction Elements. Zone 198.

	OBSERVED.			ADOPTED.		
1900.	c	b	a	c	b	a
	s	s	s	s	s	s
March 22.3....	−0.150	+0.045	+0.427	−0.144	+0.046	+0.437
22.4....	−0.138	+0.047	+0.447			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi VI. 303		γ Canis Majoris		29 Canis Majoris		Piazzi VII. 85		Bradley 1212		6 Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	295 46 5.10		305 32 5.10		296 40 4.20		312 14 5.55		313 24 5.20		308 54 5.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.595	4 40.26	47.645	5 39.09	44.810	4 44.54	45.945	5 5.97	43.035	4 10.50		5 19.12
II Red. to Mer......	.610	5.25	.680	5.14	.850	5.24	.965	5.08	.090	5.07	46.600	5.10
VI Inclination......	.800		.835		45.015		46.110		.215		.790	−0.64
VII Refraction.......	.800	1 59.6	.875	1 21.0	.020	1 55.0	.140	1 3.9	.240	1 1.6	.780	1 12.2
	Lalande 17333		15 Hydrae									
	° ′ ″		° ′ ″									
CIRCLE READING.	302 38 4.05		314 14 5.10									
	r	′ ″	r	′ ″								
I Microm. Eq......	46.920	5 25.04	43.290	4 15.91								
II Red. to Mer......	.940	5.17	.360	5.06								
VI Inclination......	47.125		.510									
VII Refraction.......	.140	1 30.8	.550	59.9								

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi VI. 303	6 54 35.47	11	+0.30	−4.09	295 48 51.0	52.3
γ Canis Majoris	6 59 19.74	11	+0.25	−4.13	305 36 28.3	53.0
29 Canis Majoris	7 14 36.15	11	+0.29	−4.11	296 42 59.0	53.3
Piazzi VII. 85	7 17 20.24	11	+0.21	−4.15	312 18 12.7	53.3
Bradley 1212	8 30 41.62	11	+0.21	−4.09	313 27 19.2	53.9
6 Hydrae	8 35 23.39	11	+0.23	−4.09	308 58 16.4	54.2
Lalande 17333	8 42 18.18	11	+0.26	−4.04	302 42 3.5	53.9
15 Hydrae	8 46 45.88	11	+0.20	−4.08	314 17 26.2	53.5

h 7.108 . . . . *dt* . . . . s −4.120

Hourly rate . . . . +0.0292

Adopted Equator Point . . . . 321° 5′ 53.43″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
6 52	29.81	49.2	48.2
7 49	29.81	47.6	46.9
8 48	29.815	46.1	44.9

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1900.0				*R*			
			305°	306°	307°	308°	305°	306°	307°	308°	305°	306°	307°	308°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
305	+0.249	7 0	−1.795	−1.806	−1.818	−1.829	+17.56	+17.29	+17.02	+16.74	82.93	79.93	77.09	74.35
306	0.245	7 30	1.971	1.982	1.992	2.000	18.67	18.41	18.15	17.89	83.02	80.02	77.18	74.44
307	0.241	8 0	2.144	2.152	2.160	2.166	19.60	19.35	19.11	18.86	83.16	80.15	77.30	74.56
308	+0.235	8 30	2.307	2.313	2.320	2.326	20.31	20.09	19.87	19.64	83.35	80.33	77.48	74.73
		9 0	−2.462	−2.466	−2.469	−2.473	+20.81	+20.61	+20.41	+20.21	83.52	80.50	77.64	74.89

1900 MARCH 24. ZONE 199. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	. . . . .	27.6	29.7	32.0	34.2	36.3	c	25 31.96	303 42 10.0 28.1	III	(47).005	7 25 25.60	−17 19 30.69	−17 2000
2	8.6	26.4	28.6	30.7	32.8	35.0	c	26 30.70	303 0 10.0 27.5	III	42.125	7 26 24.35	18 3 6.66	17 2010
3	8.6	9.8	11.9	14.1	16.4	18.5	c	27 14.14	304 4 10.0 28.9	III	43.200	7 27 7.76	16 58 42.18	16 1994
4	8.9	22.3	24.6	26.7	28.9	31.0	c	28 26.70	303 0 10.0 27.4	III	44.400	7 28 20.33	18 2 23.21	17 2025
5	8.9	27.9	30.1	32.3	34.6	36.8	c	44 32.34	303 12 10.0 27.6	III	43.460	7 44 25.90	17 50 40.05	17 2173
6	8.8	43.1	45.3	47.5	49.7	51.8	c	55 47.48	303 12 10.0 28.4	III B	43.940	7 55 40.98	17 53 43.69	17 2272
7	9.2	55.3	57.5	59.6	1.9	3.9	c	56 59.64	304 34 10.0 28.7	III	44.780	7 56 53.11	16 28 9.76	16 2249
8	8.7	50.0	52.1	54.2	56.5	58.6	c	2 54.28	303 22 10.0 28.1	III B	42.940	8 2 47.74	17 44 2.26	17 2337
9	8.6	44.3	46.4	48.5	50.9	53.0	c	5 48.62	303 22 " "	III A	42.765	8 5 42.06	17 37 36.96	17 2371
10	8.7	32.5	34.6	36.8	39.0	41.3	c	13 36.84	302 54 10.0 27.5	III	45.170	8 13 30.25	−18 8 7.63	−17 2429
11	8.8	14.0	16.4	18.5	20.8	22.9	c	15 18.52	303 6 10.0 27.6	III	42.315	8 15 11.92	−17 57 1.53	−17 2442
12	8.3	6.1	8.3	10.4	12.6	14.6	c	17 10.40	304 36 10.0 29.2	III	43.920	8 17 3.77	16 26 25.47	16 2410
13	8.7	18.2	20.5	22.6	24.8	26.9	c	22 22.60	303 12 10.0 29.3	III	43.380	8 22 15.97	17 50 39.91	17 2497
14	9.3	30.0	32.1	34.4	36.5	38.8	c	22 34.36	303 12 " "	V	45.775	8 22 27.73	17 49 55.27	17 2500
15	9.2	12.5	14.7	16.9	19.1	21.2	c	24 16.88	303 50 10.0 29.0	III	46.720	8 24 10.22	17 11 33.94	17 2512[1]
16	7.8	20.4	22.6	24.7	26.9	29.0	c	35 24.72	304 4 10.0 28.6	III	49.335	8 35 18.01	16 56 42.72	16 2541
17	9.0	21.0	23.2	25.4	27.6	29.8	c	36 25.40	304 4 " "	III	42.040	8 36 18.68	16 59 2.88	16 2550
18	8.8	33.0	35.1	37.3	39.5	41.6	c	37 37.30	304 4 " "	III C	45.610	8 37 30.58	17 4 20.87	16 2559
19	9.0	47.3	49.4	51.6	53.9	56.0	c	38 51.64	303 28 10.0 29.6	III	47.215	8 38 44.92	17 33 25.00	17 2623
20	8.2	34.4	36.6	38.7	40.9	43.0	c	39 38.72	304 26 10.0 29.6	III	48.090	8 39 31.98	−16 35 5.14	−16 2569
21	9.0	47.8	50.2	52.1	54.4	56.5	c	44 52.20	304 12 10.0 0.7	III	47.470	8 44 45.44	−16 49 17.18	−16 2597[1]
22	9.0	10.1	12.2	14.4	16.6	18.8	c	49 14.42	304 12 10.0 1.1	III	43.970	8 49 7.64	16 50 24.23	16 2626
23	9.3	48.8	50.9	53.1	55.3	57.3	c	49 53.08	303 44 10.0 28.6	III	44.720	8 49 46.30	17 18 12.55	17 2687
24	8.7	18.4	20.6	22.6	24.9	27.0	c	56 22.70	305 4 10.0 28.5	III	46.720	8 56 15.88	15 57 30.10	15 2667
25	9.4	28.9	31.0	33.2	35.5	37.6	c	59 33.24	302 54 10.0 28.4	III	42.810	8 59 26.44	18 8 51.77	17 2730
26	8.7	41.0	43.0	45.3	47.5	49.5	c	1 45.26	304 20 10.0 0.1	III B	48.030	9 1 38.43	16 44 19.61	16 2682
27	9.3	21.9	24.0	26.0	27.9	29.6	e	1 56.01	304 20 " "	VII	50.740	9 1 49.18	−16 40 16.06	−16 2683

Reduction Elements. Zone 199.

1900.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
March 24.3	−0.101	+0.031	+0.385	−0.103	+0.039	+0.368
24.4	−0.105	+0.047	+0.351			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi VII. 116		Lalande 14810		26 Monocerotis		4 Navis		15 Hydrae		Piazzi VIII. 227	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	309 40 5.25		298 58 4.20		311 44 5.15		306 44 5.30		314 14 4.90		305 18 5.05	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	46.985	5 26.07	43.740	4 23.51	40.900	3 30.49	40.980	3 31.38	43.505	4 19.34	41.665	3 44.41
II Red. to Mer.	.980	5.10	.735	5.22	.960	5.08	41.010	5.13	.530	5.06	.710	5.15
VI Inclination	47.150		.880		41.130		.170		.700		.835	
VII Refraction	.220	1 10.7	.950	1 45.8	.175	1 5.9	.195	1 18.7	.695	1 0.6	.890	1 23.3

	19 Hydrae		Piazzi IX. 13	
	° ′ ″		° ′ ″	
CIRCLE READING.	312 50 5.25		301 42 4.05	
	r	′ ″	r	′ ″
I Microm. Eq.		5 24.87	44.580	4 40.28
II Red. to Mer.	46.900	5.07	.630	5.18
VI Inclination	47.055	−0.64	.790	
VII Refraction	.110	1 3.7	.810	1 35.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi VII. 116	7 23 15.94	11	+0.21	−4.61	309 44 25.7	56.9
Lalande 14810	7 29 52.63	11	+0.26	−4.71	299 0 47.1	55.3
26 Monocerotis	7 36 34.73	11	+0.20	−4.76	311 46 34.8	56.1
4 Navis	7 41 27.04	11	+0.22	−4.65	306 46 23.1	55.9
15 Hydrae	8 46 46.39	11	+0.19	−4.59	314 17 28.7	56.1
Piazzi VIII. 227	8 54 9.16	11	+0.23	−4.60	305 20 31.3	56.2
19 Hydrae	9 3 55.48	11	+0.20	−4.66	312 54 30.9	56.5
Piazzi IX. 13	9 7 30.74	11	+0.24	−4.61	301 45 14.1	55.4

h 7.548	*dt*	s −4.682
	Hourly rate	+0.0471
	Adopted Equator Point	° ′ ″ 321 5 56.05

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 18	29.79	43.4	41.8
8 18	29.795	41.2	40.0
9 5	29.81	40.0	39.0

Note.

16. Too thick for faint stars.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. N. to 1900.0				
			302°	303°	304°	305°	306°	302°	303°	304°	305°	306°
°	s	h m	s	s	s	s	s	″	″	″	″	″
302	+0.243	7 0	−1.730	−1.743	−1.754	−1.766	−1.778	+18.44	+18.17	+17.92	+17.64	+17.36
303	0.239	7 30	1.915	1.925	1.935	1.944	1.955	19.55	19.30	19.04	18.79	18.52
304	0.234	8 0	2.095	2.102	2.110	2.119	2.128	20.45	20.22	19.99	19.74	19.49
305	0.230	8 30	2.268	2.275	2.280	2.287	2.292	21.15	20.94	20.72	20.50	20.27
306	+0.225	9 0	2.435	2.437	2.440	2.444	2.450	21.61	21.42	21.23	21.03	20.83
		9 30	−2.588	−2.588	−2.589	−2.592	−2.593	+21.84	+21.68	+21.51	+21.34	+21.17

APPARENT RIGHT ASCENSION.	*R*				
	302°	303°	304°	305°	306°
h m	″	″	″	″	″
7 0	93.89	90.36	87.02	83.85	80.82
7 30	94.06	90.53	87.18	84.00	80.97
8 0	94.23	90.70	87.34	84.16	81.12
8 30	94.41	90.87	87.50	84.31	81.26
9 0	94.58	91.03	87.66	84.47	81.41
9 30	94.73	91.18	87.80	84.61	81.55

1900 MARCH 28. ZONE 200. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.		CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0			δ 1900.0			B. D.	
		s	s	s	s	s		m	s	°	′	″	″		r	h	m	s	°	′	″	°	
1	8.6	29.3	31.5	33.8	35.9	38.1	c	25	33.72	303	42	10.0	28.7	III	46.990	7	25	25.54	−17	19	31.26	−17	2000
2	8.4	12.5	14.6	17.0	19.2	21.4	c	27	16.94	304	4	10.0	29.5	III	41.780	7	27	8.75	16	59	9.54	16	1995
3	8.9	14.3	16.6	18.7	20.9	23.0	c	11	18.70	303	10	10.0	29.0	III	46.480	8	11	10.27	17	51	41.18	17	2412
4	8.7	23.3	25.5	27.7	29.9	32.2	c	29	27.72	303	38	10.0	28.4	III	45.960	8	29	19.18	17	23	49.88	17	2552
5	8.6	52.0	54.2	56.3	58.6	0.8	c	29	56.38	303	38	“	“	III	49.170	8	29	47.84	17	22	47.88	17	2561
6	8.9	51.7	53.7	55.9	58.0	0.3	c	34	55.92	303	58	10.0	0.2	III	46.205	8	34	47.35	17	3	43.14	16	2538
7	8.7	54.2	56.3	58.5	0.7	2.7	c	35	58.48	306	44	10.0	0.3	III	45.275	8	35	49.87	14	17	53.19	14	2612
8	8.6	15.2	17.4	19.5	21.6	23.8	c	36	19.50	305	20	10.0	29.0	V	44.340	8	36	10.91	15	42	16.84	15	2547
9	8.3	13.4	15.5	17.7	19.8	21.9	c	46	17.66	305	22	10.0	28.9	III	43.260	8	46	9.01	15	40	36.04	15	2607
10	8.1	54.2	56.4	58.4	0.7	2.7	c	46	58.48	306	0	10.0	29.5	III	47.110	8	46	49.83	−15	1	20.05	−14	2677
11	9.0	24.2	26.3	28.3	30.6	32.7	c	49	28.42	305	18	10.0	0.2	III	45.960	8	49	19.75	−15	43	43.74	−15	2627
12	8.9	4.9	7.0	9.2	11.4	13.5	c	51	9.20	305	54	10.0	29.4	III	44.580	8	51	0.52	15	8	8.97	14	2706
13	9.4	54.6	56.7	58.6	0.9	3.2	c	51	58.80	305	18	10.0	29.2	III	42.175	8	51	50.12	15	44	56.70	15	2644
14	9.0	57.8	0.0	2.1	4.3	6.4	c	53	2.12	305	50	10.0	0.0	III	42.040	8	52	53.43	15	12	57.35	15	2649
15	8.0	41.3	43.5	45.6	47.8	49.8	c	53	45.60	304	54	10.0	0.5	III	46.980	8	53	36.93	16	7	25.03	15	2654
16	8.1	2.6	4.7	6.5	8.4	10.6	a	56	36.27	306	2	10.0	29.9	I	45.040	8	56	27.57	14	59	57.98	14	2726
17	8.5	57.7	0.0	2.1	4.3	6.4	c	57	2.10	306	16	10.0	29.4	III	41.575	8	56	53.39	14	47	5.28	14	2729
18	8.7	46.9	49.0	51.0	53.3	55.5	c	57	51.14	305	8	10.0	0.0	III	42.210	8	57	42.43	15	54	56.03	15	2674
19	7.5	8.1	10.2	12.4	14.6	16.8	c	4	12.42	305	8	“	“	III A	40.370	9	4	3.69	15	52	15.87	15	2712
20	9.2	2.5	4.6	6.6	8.8	11.0	c	6	6.70	304	58	10.0	0.1	III	45.450	9	5	57.96	−16	3	54.35	−15	2725
21	9.1	23.9	26.0	28.2	30.4	32.5	c	8	28.20	305	46	10.0	29.6	III	43.930	9	8	19.44	−15	16	21.47	−15	2731
22	6.8	45.8	47.9	50.0	52.3	54.4	c	10	50.08	306	26	10.0	1.0	III	43.250	9	10	41.31	14	36	31.92	14	2793
23	9.1	50.5	52.8	54.9	57.0	59.3	c	11	54.90	305	12	10.0	29.6	III A	42.730	9	11	46.13	15	47	30.87	15	2749
24	8.6	13.3	15.4	17.2	19.1	21.4	a	12	47.11	305	12	“	“	I B	42.650	9	12	38.33	15	53	59.32	15	2752
25	8.1	52.6	54.7	56.8	59.0	1.1	c	12	56.84	307	2	10.0	29.3	III	42.120	9	12	48.05	14	0	52.71	13	2809
26	9.0	14.8	16.9	19.0	21.3	23.3	c	18	19.06	304	54	10.0	1.0	III	46.700	9	18	10.27	16	7	29.86	15	2774
27	8.8	13.6	15.8	17.9	20.1	22.2	c	19	17.92	306	22	10.0	0.4	III	44.420	9	19	9.10	14	40	9.92	14	2842
28	8.0	38.8	41.0	43.2	45.4	47.6	c	19	43.20	305	6	10.0	28.9	V	46.080	9	19	34.39	15	55	43.57	15	2782
29	8.3	6.5	8.6	10.8	13.0	15.1	c	21	10.80	306	56	10.0	29.5	III	45.160	9	21	1.97	14	5	54.63	13	2851
30	7.9	2.7	4.8	7.0	9.2	11.4	c	22	7.02	305	2	10.0	29.0	III	42.990	9	21	58.20	−16	0	41.64	−15	2796
31	8.2	19.9	22.1	24.3	26.4	28.6	c	22	24.26	305	2	“	“	V B	42.880	9	22	15.43	−16	3	58.65	−15	2798
32	8.5	13.5	15.6	17.7	20.0	22.1	c	24	17.78	305	18	10.0	0.5	III	41.710	9	24	8.94	15	45	4.50	15	2811
33	9.2	20.8	23.0	25.0	27.0	28.8	e	29	55.35	306	26	10.0	0.2	VII	46.660	9	29	46.49	14	35	29.06	14	2888
34	8.3	51.6	53.7	55.6	57.2	59.6	a	31	25.19	306	26	“	“	I	42.815	9	31	16.33	14	36	38.93	14	2895
35	9.0	26.4	28.5	30.5	32.5	34.4	e	31	0.74	305	22	10.0	28.5	VII A	41.850	9	30	51.88	15	37	50.25	15	2841
36	9.0	10.0	12.1	14.2	16.4	18.7	c	40	14.28	305	18	10.0	0.0	III	43.520	9	40	5.38	15	44	30.14	15	2890
37	8.9	33.7	35.7	37.8	40.0	42.2	c	45	37.88	306	8	10.0	29.8	III	44.800	9	45	28.95	14	54	3.36	14	2957
38	8.8	9.7	11.8	14.0	16.0	18.3	c	47	13.96	306	36	10.0	0.0	III	41.980	9	47	5.02	14	26	55.86	14	2965
39	8.2	0.0	2.1	4.4	6.6	8.6	c	48	4.34	305	8	10.0	29.9	III	42.910	9	47	55.40	15	54	42.30	15	2921
40	9.0	10.5	12.6	14.7	17.0	19.1	c	52	14.78	305	36	10.0	29.1	III	45.450	9	52	5.82	−15	25	52.71	−15	2937
41	9.0	28.1	30.3	32.5	34.6	36.8	c	52	32.46	305	36	“	“	V	50.010	9	52	23.50	−15	24	25.96	−15	2939
42	8.9	32.3	34.4	36.5	38.7	40.8	c	57	36.54	306	40	10.0	0.0	III	47.315	9	57	27.56	−14	21	13.37	−14	3008

Reduction Elements. Zone 200.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 28.2....	−0.102	+0.039	+0.384	−0.100	+0.044	+0.414
28.4....	−0.099	+0.048	+0.443			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi VII. 116		Lalande 14810		20 Navis		Lalande 16304		Piazzi VIII. 95		Lalande 17333	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	309 40 5.30		298 58 4.20		305 32 4.50		308 44 5.05		301 48 4.30		302 38 4.45	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	46.900	5 24.74	43.710	4 24.04		5 37.34	45.870	5 4.66	44.425	4 37.29	47.065	5 28.04
II Red. to Mer.	.920	5.10	.820	5.22	47.540	5.13	.880	5.11	.490	5.18	.100	5.17
VI Inclination	47.100		.920		.705	−0.64	46.040		.625		.280	
VII Refraction	.140	1 10.3	.965	1 45.2	.760	1 21.8	.100	1 13.0	.645	1 34.4	.300	1 31.4

	Lalande 18817		κ Hydrae		Lalande 19433		υ^2 Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	300 22 4.00		307 10 5.00		302 30 4.60		308 28 5.30	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.720	4 43.00	42.575	4 1.27	45.100	4 50.02	42.140	3 53.46
II Red. to Mer.	.770	5.20	.590	5.13	.150	5.17	.190	5.12
VI Inclination	.925		710		.260		.335	
VII Refraction	.960	1 40.1	.770	1 17.5	.330	1 32.1	.340	1 14.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi VII. 116	7 23 17.85	11	+0.25	−6.63	309 44 24.8	55.9
Lalande 14810	7 29 54.45	11	+0.31	−6.66	299 0 48.3	56.5
20 Navis	8 8 52.65	11	+0.27	−6.64	305 36 24.5	57.0
Lalande 16304	8 13 47.69	11	+0.26	−6.61	308 48 1.8	57.4
Piazzi VIII. 95	8 27 9.76	11	+0.29	−6.56	301 51 12.4	55.9
Lalande 17333	8 42 20.62	11	+0.29	−6.59	302 42 6.3	57.1
Lalande 18817	9 28 44.98	11	+0.30	−6.52	300 25 12.1	57.3
κ Hydrae	9 35 39.67	11	+0.26	−6.65	307 12 53.9	57.7
Lalande 19433	9 50 18.08	11	+0.29	−6.54	302 33 27.7	57.9
υ^2 Hydrae	10 0 24.32	11	+0.26	−6.62	308 30 49.9	57.6

h 7.944 .... *dt* .... s −6.620

Hourly rate .... +0.0228

Adopted Equator Point .... 321° 5′ 57″.13

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 20	29.80	44.4	44.7
8 6	29.805	43.1	43.2
8 59	29.80	41.2	41.4
10 2	29.80	39.6	40.7

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0					
			303°	304°	305°	306°.	307°	308°
°	s	h m	s	s	s	s	s	s
303	+0.285	7 0	−1.666	−1.678	−1.691	−1.702	−1.715	−1.728
304	0.280	7 30	1.849	1.860	1.871	1.881	1.892	1.904
305	0.275	8 0	2.031	2.041	2.050	2.059	2.068	2.077
306	0.270	8 30	2.210	2.217	2.225	2.231	2.237	2.245
307	0.265	9 0	2.380	2.385	2.388	2.393	2.399	2.404
308	+0.260	9 30	2.540	2.542	2.544	2.547	2.548	2.553
		10 0	−2.685	−2.685	−2.684	−2.686	−2.686	−2.687

APPARENT RIGHT ASCENSION.	$D=$Z. D. N. to 1900.0						R					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	308°
h m	″	″	″	″	″	″	″	″	″	″	″	″
7 0	+18.13	+17.86	+17.59	+17.32	+17.04	+16.75	89.87	86.54	83.37	80.37	77.50	74.76
7 30	19.33	19.08	18.82	18.54	18.27	17.99	90.05	86.72	83.54	80.54	77.66	74.92
8 0	20.34	20.09	19.85	19.58	19.32	19.06	90.24	86.90	83.71	80.70	77.82	75.08
8 30	21.13	20.90	20.67	20.43	20.19	19.94	90.43	87.08	83.89	80.87	77.98	75.23
9 0	21.68	21.48	21.25	21.04	20.83	20.60	90.60	87.24	84.04	81.02	78.13	75.37
9 30	22.00	21.82	21.63	21.44	21.25	21.05	90.66	87.30	84.10	81.08	78.18	75.42
10 0	+22.08	+21.92	+21.77	+21.61	+21.45	+21.28	90.72	87.36	84.16	81.13	78.24	75.48

1900 MARCH 31. ZONE 201. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.0	0.6	2.8	4.8	7.1	9.2	c	49 4.90	304 12 10.0 1.8	III	42.060	8 48 54.74	−16 51 1.00	−16 2624
2	9.1	35.5	37.7	39.8	42.0	44.3	c	59 39.86	304 16 10.0 0.0	III	41.430	8 59 29.64	16 47 13.53	16 2676
3	8.7	30.5	32.8	34.9	37.0	39.2	c	4 34.88	303 14 10.0 0.0	III	41.910	9 4 24.64	17 49 7.55	17 2763
4	9.2	57.5	59.7	1.6	3.5	5.5	e	8 31.41	302 44 10.0 28.6	VII	43.035	9 8 21.15	18 18 50.75	18 2608
5	9.1	27.4	29.4	31.6	33.8	36.0	c	13 31.64	303 14 10.0 29.9	III C	45.670	9 13 21.34	17 54 21.91	17 2813
6	8.8	24.6	26.6	28.7	31.0	33.2	c	15 28.82	303 14 " "	III A	42.115	9 15 18.51	17 45 48.56	17 2821
7	8.4	21.9	24.1	26.3	28.4	30.6	c	18 26.26	303 58 10.0 0.1	III	44.820	9 18 15.92	17 4 9.47	16 2767
8	9.0	10.0	12.1	14.3	16.6	18.8	c	22 14.36	302 52 10.0 29.6	III	44.910	9 22 4.00	18 10 11.46	17 2857
9	9.0	32.6	34.7	36.8	38.9	41.0	c	22 36.80	304 12 10.0 1.0	V	45.690	9 22 26.43	16 49 52.85	16 2786^2
10	8.3	12.4	14.6	16.8	19.0	21.2	c	24 16.80	303 6 10.0 29.7	V	43.110	9 24 6.43	−17 56 46.40	−17 2868
11	9.0	56.7	58.8	1.0	3.2	5.3	c	29 1.00	304 6 10.0 0.3	III	46.490	9 28 50.59	−16 55 36.80	−16 2824
12	8.9	50.0	52.2	54.3	56.5	58.7	c	29 54.34	303 30 10.0 29.7	III	43.190	9 29 43.93	17 32 42.29	17 2898
13	8.2	41.8	44.0	46.3	48.3	50.5	c	31 46.18	302 50 10.0 29.5	III	47.220	9 31 35.76	18 11 27.12	17 2904
14	9.1	46.9	49.1	51.5	53.5	55.6	c	32 51.32	304 46 10.0 0.8	III	47.450	9 32 40.88	16 15 16.04	16 2842
15	8.6	45.3	47.4	49.6	51.8	54.0	c	34 49.62	303 8 10.0 29.0	III A	42.885	9 34 39.18	17 51 34.54	17 2922
16	8.2	2.0	4.3	6.6	8.8	10.9	c	36 6.52	303 8 " "	III C	41.110	9 35 56.08	18 1 49.72	17 2930
17	8.9	2.3	4.4	6.5	8.4	10.3	e	36 36.38	303 36 10.0 0.0	VII	46.640	9 36 25.92	[17 25 37.94]	17 2931
18	8.7	28.9	31.0	33.0	34.9	36.8	e	37 2.92	303 36 " "	VII	46.210	9 36 52.46	17 25 46.21	17 2934
19	9.2	33.5	35.5	37.2	39.1	41.5	a	41 7.45	303 36 " "	I B	46.690	9 40 56.96	17 28 46.46	17 2957
20	8.1	11.8	13.9	16.1	18.3	20.6	c	41 16.14	302 50 10.0 29.8	III B	48.270	9 41 5.66	−18 14 20.16	−18 2772
21	9.2	31.0	33.3	35.3	37.6	39.8	c	43 35.40	302 50 " "	III A	44.470	9 43 24.91	−18 9 4.77	−17 2969
22	8.5	52.0	54.3	56.3	58.6	0.6	c	44 56.36	303 12 10.0 0.0	III	41.730	9 44 45.86	17 51 10.88	17 2975
23	8.8	19.3	21.4	23.6	25.7	28.0	c	47 23.60	304 10 10.0 29.9	III	42.990	9 47 13.08	16 52 43.85	16 2904
24	9.1	3.8	6.0	8.1	10.4	12.5	c	48 8.16	303 30 10.0 0.0	III B	38.275	9 47 57.65	17 37 29.07	17 2991
25	7.0	44.8	47.0	49.2	51.5	53.7	c	48 49.24	303 30 " "	III A	49.830	9 48 38.71	17 27 19.15	17 2994
26	8.9	17.4	19.5	21.6	23.8	26.0	c	50 21.66	303 30 " "	III C	42.110	9 50 11.12	17 39 28.98	17 3003
27	9.0	6.3	8.5	10.6	12.9	15.0	c	51 10.66	303 30 " "	III C	46.245	9 51 0.12	17 38 9.79	17 3007
28	9.1	18.9	21.0	23.3	25.4	27.6	c	52 23.24	302 54 10.0 29.3	III B	45.840	9 52 12.70	18 11 7.06	17 3015
29	9.3	44.5	46.8	49.0	51.3	53.4	c	55 49.00	302 54 " "	III	42.730	9 55 38.44	18 8 53.15	17 3032
30	7.7	21.7	23.9	26.0	28.2	30.4	c	59 26.04	303 26 10.0 0.0	III	42.260	9 59 15.45	−17 37 0.04	−17 3046
31	8.0	29.6	31.7	34.1	36.2	38.4	c	0 34.00	304 40 10.0 0.1	V C	46.660	10 0 23.39	[−16 27 58.97]	−16 2957
32	8.7	2.8	4.9	7.0	9.3	11.5	c	2 7.10	304 40 " "	III A	45.680	10 1 56.49	16 18 35.64	16 2967
33	8.5	48.3	50.5	52.6	54.8	57.0	c	3 52.64	302 46 10.0 29.9	III	46.500	10 3 42.03	18 15 41.01	18 2851
34	9.1	3.6	5.6	7.5	9.3	11.7	a	7 37.33	305 26 10.0 0.7	I	46.410	10 7 26.68	15 35 32.64	15 3001^1
35	8.0	33.9	35.9	38.0	40.3	42.4	c	7 38.10	305 26 " "	III	46.405	10 7 27.45	15 35 34.21	15 3001^2
36	9.3	34.5	36.9	39.0	41.2	43.3	c	9 38.98	303 30 10.0 0.1	III	44.680	10 9 28.33	17 32 13.54	17 3095
37	8.3	26.8	28.9	31.1	33.3	35.6	c	11 31.14	302 50 10.0 0.0	III	42.340	10 11 20.49	18 13 0.50	17 3103
38	8.6	42.8	44.9	47.0	49.4	51.6	c	14 47.14	302 50 " "	III B	39.955	10 14 36.47	18 16 59.39	18 2894
39	8.9	16.9	19.0	21.3	23.4	25.5	c	18 21.22	304 42 10.0 0.4	III	44.270	10 18 10.52	16 20 17.56	16 3038
40	9.2	21.7	23.8	25.9	28.0	30.3	c	22 25.94	304 42 10.0 0.3	V B	45.130	10 22 15.22	−16 23 16.08	−16 3059
41	9.1	1.2	3.3	5.3	7.1	9.6	a	24 35.48	302 58 10.0 0.5	I	45.110	10 24 24.75	−18 4 5.43	−17 3160
42	9.0	4.5	6.5	8.3	10.1	12.6	a	25 38.46	303 42 10.0 29.9	I	42.230	10 25 27.72	17 20 58.45	17 3164
43	8.0	57.7	0.0	2.3	4.4	8.6	c_2 d_1	28 0.02	304 36 10.0 0.1	V	43.790	10 27 49.27	16 26 28.58	16 3078
44	7.2	54.3	56.6	58.6	0.9	2.9	c	30 58.66	302 58 10.0 0.0	III	48.270	10 30 47.90	−18 3 6.33	−17 3187

Reduction Elements. Zone 201.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
March 31.3....	−0.110	+0.023	+0.438	−0.112	+0.033	+0.450
31.4....	−0.115	+0.043	+0.461			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Lalande 17333		15 Hydrae		Piazzi VIII. 227		Piazzi IX. 13		μ Hydrae		Bradley 1462	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ″		° ′ ″	
CIRCLE READING.	302 38 4.50		314 14 5.45		305 18 5.30		301 42 5.20		304 42 5.15		313 54 6.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	47.095	5 28.12	43.500	4 19.48	41.640	3 43.93	44.530	4 39.38	46.580	5 18.30	45.550	4 59.23
II Red. to Mer.	.090	5.17	.560	5.06	.670	5.15	.630	5.18	.620	5.15	.640	5.06
VI Inclination	.275		.680		.830		.715		.750		.775	
VII Refraction	.300	1 31.9	.720	1 0.6	.855	1 23.3	.745	1 35.4	.770	1 25.3	.790	1 1.5

	44 Hydrae		φ Hydrae	
	° ′ ″		° ′ ″	
CIRCLE READING.	297 48 5.25		304 40 4.95	
	r	′ ″	r	′ ″
I Microm. Eq.		5 29.47	46.900	5 24.62
II Red. to Mer.	47.170	5.20	.945	5.15
VI Inclination	.280	−0.64	47.080	
VII Refraction	.330	1 51.8	.110	1 25.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Lalande 17333	8 42 22.15	11	+0.30	−8.19	302 42 5.9	56.8
15 Hydrae	8 46 49.80	11	+0.23	−8.15	314 17 29.4	56.9
Piazzi VIII. 227	8 54 12.55	11	+0 29	−8.16	305 20 31.1	56.3
Piazzi IX. 13	9 7 34.16	11	+0.30	−8.21	301 45 14.4	56.2
μ Hydrae	10 21 25.91	11	+0.29	−8.24	304 46 3.3	58.1
Bradley 1462	10 26 9.15	11	+0.24	−8.26	313 58 8.8	57.2
44 Hydrae	10 29 26.22	11	+0.33	−8.29	297 51 47.5	57.6
φ Hydrae	10 33 53.33	10	+0.29	−8.30	304 44 9.3	57.7

h		s
8.880	*dt*	−8.178
	Hourly rate	−0.0594

Adopted Equator Point ° ′ ″ 321 5 57.10

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
8 39	29.78	39.6	39.2
9 38	29.79	37.8	38.0
10 38	29.80	36.8	37.9

Note.

2. Image good.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D*= Z. D. N. to 1900.0				
			302°	303°	304°	305°	306°	302°	303°	304°	305°	306°
°	s	h m	s	s	s	s	s	″	″	″	″	″
302	+0.305	8 30	−2.142	−2.147	−2.155	−2.162	−2.170	+21.51	+21.27	+21.03	+20.78	+20.53
303	0.298	9 0	2.319	2.324	2.329	2.333	2.337	22.08	21.87	21.65	21.43	21.20
304	0.292	9 30	2.489	2.490	2.492	2.494	2.497	22.40	22.21	22.01	21.82	21.61
305	0.286	10 0	2.643	2.643	2.644	2.643	2.644	22.48	22.31	22.15	21.97	21.80
306	+0.281	10 30	2.783	2.781	2.778	2.777	2.773	22.27	22.15	22.01	21.87	21.73
		11 0	−2.906	−2.901	−2.896	−2.891	−2.887	+21.85	+21.75	+21.66	+21.55	+21.44

APPARENT RIGHT ASCENSION.	*R*				
	302°	303°	304°	305°	306°
h m	″	″	″	″	″
8 30	94.36	90.82	87.46	84.28	81.23
9 0	94.52	90.97	87.60	84.41	81.36
9 30	94.67	91.12	87.74	84.55	81.49
10 0	94.73	91.18	87.80	84.61	81.55
10 30	94.78	91.22	87.84	84.64	81.58
11 0	94.80	91.24	87.86	84.66	81.60

1900 APRIL 7. ZONE 202. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.2	53.0	55.1	57.3	59.5	1.7	c	30 57.32	306 48 10.0 28.6	III 42.525	9 30 43.92	−14 14 40 11	−14 2893
2	8.8	1.7	3.7	5.6	7.4	9.6	a	35 35.58	304 14 10.0 28.0	I 45.210	9 35 22.18	16 47 54.29	16 2852
3	9.0	37.8	39.9	42.1	44.2	46.4	c	35 42.08	305 36 10.0 27.4	V 41.950	9 35 28.67	15 26 55.96	15 2864
4	8.7	19.7	21.7	24.0	26.3	28.3	c	40 24.00	304 56 10.0 28.6	III 46.050	9 40 10.56	16 5 37.34	15 2892
5	8.7	7.8	10.1	12.2	14.3	16.5	c	49 12.18	304 0 10.0 28.2	III 47.240	9 48 58.69	17 1 17.19	16 2915
6	8.5	51.1	53.4	55.5	57.6	59.7	c	49 55.46	305 26 10.0 27.8	III 54.300	9 49 41.96	15 32 56.99	15 2928
7	6.8	22.4	24.5	26.7	28.9	31.0	c	50 26.70	305 26 " "	V C 42.230	9 50 13.20	15 43 16.60	15 2929
8	8.4	17.6	19.8	21.9	24.0	26.0	c	51 21.86	305 58 10.0 27.3	V 44.110	9 51 8.34	15 4 13.72	14 2980
9	8.1	48.0	50.1	52.2	54.5	56.5	c	57 52.26	306 24 10.0 28.5	III 41.660	9 57 38.70	14 38 57.46	14 3010
10	8.5	11.7	14.0	16.1	18.4	20.5	c	1 16.14	306 42 10.0 28.1	III 46.420	10 1 2.56	−14 19 25.78	−14 3025
11	6.0	30.8	33.1	35.3	37.4	39.5	c	2 35.22	304 24 10.0 27.4	III 41.465	10 2 21.64	−16 39 7.10	−16 2974
12	8.7	52.9	55.3	57.2	59.4	1.6	c	6 57.28	306 28 10.0 28.2	III 45.630	10 6 43.67	14 33 41.53	14 3049
13	8.0	49.2	51.3	53.6	55.7	57.9	c	7 53.54	305 38 10.0 27.9	III 45.705	10 7 39.94	15 23 42.38	15 3003
14	8.5	34.5	36.7	38.8	41.0	43.1	c	11 38.82	304 14 10.0 28.0	III C 42.330	10 11 25.19	16 55 17.10	16 3004
15	9.4	39.3	41.5	43.7	45.8	48.0	c	14 43.66	304 14 " "	III C 42.910	10 14 30.01	16 55 6.06	16 3017
16	9.3	47.0	49.3	51.5	53.7	55.6	c	15 51.42	304 14 " "	III A 38.855	10 15 37.77	16 46 41.82	16 3025
17	9.1	3.6	5.8	7.9	10.0	12.1	c	16 7.88	304 14 " "	V A 41.980	10 15 54.23	16 45 43.87	16 3026
18	8.6	41.8	43.9	46.0	48.3	50.4	c	18 46.08	305 18 10.0 27.8	III 45.140	10 18 32.41	15 43 54.21	15 3044
19	9.1	49.6	51.6	53.8	56.0	58.1	c	21 53.82	305 42 10.0 28.0	III A 41.630	10 21 40.14	15 17 45.10	15 3059
20	7.4	7.5	9.7	11.7	14.0	16.1	c	23 11.80	305 42 " "	III B 40.920	10 22 58.11	−15 24 27.10	−15 3062
21	8.8	36.5	38.8	41.1	43.3	45.5	c	25 41.04	303 52 10.0 28.3	III 46.010	10 25 27.33	−17 9 41.34	−16 3071
22	9.0	21.7	23.7	25.9	28.2	30.3	c	32 25.96	304 58 10.0 28.2	III 45.000	10 32 12.22	16 3 57.71	15 3090
23	8.7	8.6	10.7	12.8	15.1	17.2	c	34 12.88	305 36 10.0 27.5	III 46.470	10 33 59.13	15 25 28.07	15 3096
24	7.8	31.5	33.7	35.7	38.2	40.2	c	34 35.86	303 6 10.0 27.5	V 47.390	10 34 22.10	17 55 18.82	17 3203
25	8.7	2.2	4.5	6.7	9.0	11.0	c	36 6.68	302 48 10.0 27.5	III 47.810	10 35 52.91	18 13 10.38	17 3211
26	8.1	33.2	35.3	37.6	39.8	41.8	c	38 37.54	304 52 10.0 28.1	III 44.515	10 38 23.77	16 10 7.40	15 3114
27	8.2	38.2	40.3	42.1	43.9	46.3	a	41 12.10	304 28 10.0 28.4	I 43.370	10 40 58.31	16 34 28.85	16 3122
28	7.8	14.8	17.0	19.2	21.5	23.5	c	41 19.20	304 50 10.0 28.6	III 43.150	10 41 5.41	16 12 33.39	15 3123
29	8.9	46.5	48.7	50.9	53.1	55.2	c	41 50.88	306 0 10.0 28.5	V 41.780	10 41 37.08	15 2 57.67	14 3178
30	9.0	24.7	27.0	29.1	31.5	33.5	c	45 29.16	304 14 10.0 28.7	III 45.310	10 45 15.34	−16 47 53.74	−16 3134
31	8.0	3.5	5.7	7.8	10.0	12.1	c	46 7.82	304 56 10.0 28.4	III 46.970	10 45 54.00	[−16 5 19.92]	−15 3140
32	8.2	18.0	20.1	22.1	23.7	26.3	a	47 52.23	302 56 10.0 27.0	I 44.050	10 47 38.40	18 6 21.21	17 3252
33	7.0	58.7	1.0	3.0	7.2	8.9	$c_3 d_2$	47 58.72	304 58 10.0 29.0	V 46.760	10 47 44.90	16 3 24.89	15 3150
34	9.2	54.5	56.5	58.7	0.9	3.0	c	51 58.72	303 34 10.0 27.7	III 45.165	10 51 44.87	17 27 59.10	17 3260
35	8.5	38.1	40.2	42.4	44.6	46.8	c	52 42.42	303 16 10.0 27.9	III 47.070	10 52 28.57	17 45 23.24	17 3264
36	9.2	43.3	45.4	47.6	49.9	52.0	c	55 47.64	303 16 " "	III 40.990	10 55 33.77	17 47 19.69	17 3279
37	9.0	41.8	44.0	46.2	48.4	50.5	c	57 46.18	304 4 10.0 27.6	III 46.740	10 57 32.31	16 57 27.42	16 3175
38	9.5	2.6	4.7	6.9	9.2	11.3	c	2 6.94	302 42 10 0 27.0	III 45.730	11 1 53.03	18 19 51.46	18 3104
39	8.6	23.0	25.3	27.5	29.7	31.7	c	4 27.44	302 42 " "	III 48.845	11 4 13.52	18 18 51.42	18 3113
40	8.2	17.8	20.0	21.9	24.3	26.4	c	8 22.08	304 20 10.0 27.7	V 42.850	11 8 8.15	−16 42 42.70	−16 3206
41	8.6	8.4	10.6	12.7	15.1	17.2	c	10 12.80	302 48 10.0 27.5	III 41.600	11 9 58.86	−18 15 10.05	−18 3135
42	9.4	18.3	20.7	22.6	24.8	26.9	c	12 22.66	304 10 10.0 27.3	III A 45.640	11 12 8.72	16 48 33.67	16 3220
43	9.3	45.6	47.7	49.9	52.1	54.5	c	14 49.96	304 10 " "	III C 48.000	11 14 36.01	16 57 29.60	16 3229
44	8.3	5.9	7.8	9.8	11.8	14.0	a	15 39.86	304 10 " "	I B 43.675	11 15 25.89	16 55 38.36	16 3232
45	8.8	36.3	38.5	40.9	43.1	45.3	c	15 40.82	302 40 10.0 26.3	V 44.530	11 15 26.86	18 22 16.57	18 3156
46	9.0	52.0	54.1	56.3	58.5	0.8	c	17 56.34	304 16 10.0 27.5	III 45.385	11 17 42.36	16 45 53.38	16 3237
47	8.3	53.1	55.2	57.0	58.9	1.3	a	24 27.08	304 14 10.0 28.6	I 43.675	11 24 13.08	16 48 24.38	16 3259
48	9.1	51.3	53.5	55.5	57.8	59.9	c	24 55.60	303 10 10.0 26.7	III 46.180	11 24 41.59	17 51 42.01	17 3396
49	9.5	52.1	54.4	56.4	58.7	0.8	c	26 56.48	304 2 10.0 27.5	III 44.550	11 26 42.47	17 0 10.32	16 3270
50	9.5	20.2	22.3	24.5	26.8	29.0	(c)	30 24.56	303 0 10.0 26.5	(III) 42.935	11 30 10.53	−18 2 45.00	−17 3417

Reduction Elements. Zone 202.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 7.3....	−0.063	−0.054	+0.192	−0.069	−0.022	+0.238
7.4....	−0.075	+0.009	+0.283			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi IX. 13		θ Pyxidis Nautilis		α Hydrae		Lalande 18817		β Crateris		γ Crateris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	301 48 3.50		295 32 3.25		312 48 4.30		300 22 3.40		298 46 3.25		303 54 4.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	45.655	5 0.79	39.155	2 56.57	45.400	4 56.24	44.360	4 35.84	43.520	4 19.88	44.745	4 43.20
II Red. to Mer.	.710	5.18	.200	5.25	.485	5.07	.410	5.20	.600	5.22	.755	5.16
VI Inclination	.850	−6 25.76	.315		.620		.530		.680		.975	
VII Refraction	.865	1 30.3	.350	1 56.6	.630	1 0.4	.580	1 35.2	.745	1 41.9	.940	1 23.4

	κ Crateris		θ Crateris	
	° ′ ″		° ′ ″	
CIRCLE READING.	309 14 4.20		311 48 3.90	
	r	′ ″	r	′ ″
I Microm. Eq.	42.890	4 8.05	41.030	3 32.32
II Red. to Mer.	.935	5.11	.060	5.08
VI Inclination	43.110		.230	
VII Refraction	.130	1 8.7	.230	1 2.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi IX. 13	9 7 37.07	11	+0.13	−11.03	301 45 13.4	55.9
θ Pyxidis Nautilis	9 17 17.15	11	+0.15	−11.07	295 33 8.5	56.2
α Hydrae	9 22 53.84	11	+0.09	−11.13	312 52 5.2	55.8
Lalande 18817	9 28 49.54	11	+0.13	−11.03	300 25 9.2	55.5
β Crateris	11 6 58.25	11	+0.14	−11.15	298 48 46.5	56.8
γ Crateris	11 20 7.07	11	+0.12	−11.13	303 57 29.0	56.2
κ Crateris	11 22 21.22	11	+0.10	−11.14	309 17 8.7	56.0
θ Crateris	11 31 50.50	11	+0.10	−11.13	311 50 38.5	56.5

9.320h .... dt .... −11.065s
Hourly rate .... − 0.0361
Adopted Equator Point .... 321° 5′ 56.″12

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
9 5	29.49	60.3	60.9
9 59	29.50	59.3	60.1
10 49	29.49	58.0	59.2
11 33	29.495	57.5	58.5

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			302°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	s
302	+0.128	9 30	−2.419	−2.420	−2.424	−2.427	−2.431	−2.435
303	0.124	10 0	2.590	2.592	2.592	2.592	2.593	2.595
304	0.121	10 30	2.750	2.748	2.746	2.743	2.742	2.741
305	0.118	11 0	2.894	2.888	2.884	2.879	2.876	2.872
306	0.115	11 30	3.019	3.012	3.004	2.997	2.991	2.985
307	+0.111	12 0	−3.123	−3.114	−3.104	−3.094	−3.086	−3.078

APPARENT RIGHT ASCENSION.	$D =$ Z. D. N. to 1900.0						R					
	302°	303°	304°	305°	306°	307°	302°	303°	304°	305°	306°	307°
h m	″	″	″	″	″	″	″	″	″	″	″	″
9 30	+23.15	+22.93	+22.71	+22.48	+22.25	+22.02	89.56	86.20	83.00	79.96	77.09	74.34
10 0	23.31	23.11	22.91	22.71	22.51	22.30	89.66	86.30	83.10	80.06	77.18	74.42
10 30	23.18	23.02	22.84	22.67	22.49	22.32	89.74	86.38	83.18	80.13	77.25	74.49
11 0	22.79	22.66	22.52	22.39	22.24	22.09	89.83	86.46	83.25	80.20	77.32	74.56
11 30	22.13	22.04	21.94	21.83	21.73	21.61	89.93	86.56	83.35	80.30	77.41	74.64
12 0	+21.22	+21.16	+21.10	+21.03	+20.96	+20.89	90.01	86.64	83.43	80.37	77.48	74.71

1900 APRIL 19. ZONE 203. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.0	8.8	11.1	13.3	15.5	17.5	c	36 13.24	305 46 10.0	5.2	III	45.925	10 35 57.66	−15 15 22.82	−15 3106
2	9.2	58.4	0.4	2.4	4.4	6.6	a	39 32.15	306 0 10.0	6.1	I	45.680	10 39 16.56	15 1 25.00	14 3171
3	9.1	48.9	51.0	53.1	55.4	57.5	c	39 53.18	306 42 10.0	5.6	III	45.160	10 39 37.59	14 19 34.96	14 3172
4	8.0	32.0	34.2	36.4	38.6	40.7	c	41 36.38	306 26 10.0	5.5	III	41.560	10 41 20.78	14 36 44.46	14 3175
5	7.0	53.3	55.6	57.6	59.8	2.0	c	42 57.66	306 18 10.0	6.6	III	43.675	10 42 42.06	14 44 3.94	14 3186
6	8.9	39.2	41.4	43.5	45.7	47.8	c	0 43.32	305 44 10.0	5.2	III	42.420	11 0 27.62	15 18 30.25	15 3190
7	8.8	35.7	37.7	40.0	42.2	44.5	c	2 40.02	305 20 10.0	5.6	III	46.455	11 2 24.32	15 41 13.81	15 3201
8	8.6	58.2	0.2	2.5	4.7	6.8	c	4 2.48	306 4 10.0	5.4	III	40.350	11 3 46.77	14 59 8.67	14 3268
9	8.2	48.6	50.7	52.9	55.1	57.2	c	5 52.90	305 8 10.0	5.0	III	41.940	11 5 37.19	15 54 41.18	15 3216
10	8.9	58.5	0.8	2.9	5.0	7.3	c	7 2.90	306 42 10.0	5.8	III A	41.650	11 6 47.18	−14 17 27.16	−14 3279
11	9.0	31.4	33.6	35.9	38.1	40.1	c	8 35.82	306 42 “	“	III C	45.020	11 8 20.09	−14 26 4.08	−14 3284
12	8.0	24.4	26.5	28.6	30.9	33.0	c	14 28.68	305 20 10.0	5.8	III	44.270	11 14 12.93	15 41 55.89	15 3241
13	9.3	8.3	10.4	12.6	14.8	16.9	c	18 12.60	306 52 10.0	5.9	V	45.750	11 17 56.83	14 9 24.76	13 3357
14	8.0	48.5	50.6	52.4	54.3	56.4	a	18 22.06	306 52 “	“	I	48.025	11 18 6.29	14 8 38.16	13 3359
15	9.4	56.0	57.9	0.3	2.3	4.5	c	21 0.20	305 26 10.0	5.8	III	44.760	11 20 44.42	15 35 46.36	15 3264
16	8.5	25.3	27.5	29.6	31.7	33.8	c	24 29.58	306 28 10.0	5.4	III	45.060	11 24 13.78	14 33 38.11	14 3332
17	9.3	13.8	15.8	18.0	20.4	22.4	c	31 18.08	306 2 10.0	6.5	III	41.185	11 31 2.25	15 0 52.80	14 3358
18	7.5	53.1	55.3	57.5	59.6	1.7	c	33 57.44	306 32 10.0	6.0	III	41.390	11 33 41.60	14 30 47.92	14 3370
19	8.8	32.1	34.1	36.0	37.8	40.1	a	36 5.70	306 14 10.0	6.1	I	42.070	11 35 49.85	14 48 34.28	14 3379
20	7.3	18.8	21.0	23.0	25.2	27.3	c	36 23.06	304 54 10.0	6.0	III	45.130	11 36 7.21	−16 7 40.94	−15 3330
21	8.3	11.2	13.3	15.4	17.7	19.8	c	39 15.48	306 8 10.0	5.5	III	43.825	11 38 59.61	−14 54 2.89	−14 3391
22	7.0	16.0	18.3	20.3	22.6	24.6	c	43 20.36	305 2 10.0	5.5	III	45.650	11 43 4.48	15 59 30.99	15 3356
23	8.7	23.1	25.3	27.5	29.6	31.9	c	50 27.48	305 32 10.0	4.7	III	41.865	11 50 11.59	15 30 42.60	15 3381
24	8.2	35.1	37.3	39.5	41.7	43.8	c	51 39.48	306 54 10.0	6.2	III	41.600	11 51 23.58	14 8 43.29	13 3477
25	8.6	42.5	44.7	46.8	49.1	51.1	c	52 46.84	305 18 10.0	5.7	III	44.840	11 52 30.93	15 43 45.95	15 3387
26	8.0	30.1	32.3	34.5	36.6	38.8	c	54 34.46	305 32 10.0	4.8	III	45.070	11 54 18.55	15 29 41.40	15 3396
27	9.6	22.7	24.7	27.0	29.1	31.3	c	58 26.96	304 52 10.0	6.6	III	42.280	11 58 11.02	16 10 35.83	15 3406
28	8.4	9.6	11.7	13.8	16.0	18.0	c	59 13.82	306 18 10.0	5.9	V	45.420	11 58 57.88	14 43 33.48	14 3454
29	9.0	26.3	28.5	30.6	32.8	35.0	c	13 30.64	305 46 10.0	5.1	III	46.230	12 13 14.65	15 15 18.90	15 3449
30	9.0	46.5	48.8	50.7	53.0	55.0	c	15 50.80	305 46 “	“	III A	46.070	12 15 34.81	−15 12 6.99	−14 3495
31	8.6	25.0	27.2	29.4	31.5	33.6	c	25 29.34	306 16 10.0	5.5	III	43.660	12 25 13.31	−14 46 7.09	−14 3529
32	8.7	32.3	34.4	36.7	38.8	40.8	c	31 36.60	305 12 10.0	4.8	III	44.010	12 31 20.55	−15 50 3.91	−15 3504

Reduction Elements. Zone 203.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 19.3....	−0.017	−0.138	+0.214	−0.026	−0.146	+0.227
19.5....	−0.034	−0.154	+0.240			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	φ Hydrae		ν Hydrae		*b*² Hydrae		ε Corvi		γ Corvi		β Corvi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	304 40 8.05		305 22 7.65		301 26 6.50		298 58 7.30		304 2 7.50		298 12 7.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.780	5 3.26	43.335	4 15.79	44.560	4 39.67	45.750	5 2.53	46.740	5 21.88	43.460	4 18.16
II Red. to Mer......	.815	5.15	.360	5.15	.570	5.19	.815	5.22	.800	5.16	.455	5.23
VI Inclination	.980		.470		.770		.920		.940		.620	
VII Refraction.......	46.020	1 21.1	.525	1 19.1	.780	1 31.8	.960	1 41.3	.985	1 23.1	.650	1 44.6

	χ Virginis	
	° ′ ″	
CIRCLE READING.	313 36 8.10	
	r	′ ″
I Microm. Eq......	40.815	3 28.90
II Red. to Mer......	.885	5.06
VI Inclination	41.060	
VII Refraction.......	.070	59.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
44 Hydrae	10 29 30.94	11	+0.12	−12.99	297 52	....
φ Hydrae	10 33 58.11	11	+0.08	−13.03	304 43 55.4	45.2
ν Hydrae	10 44 57.03	11	+0.08	−13.03	305 25 9.5	45.6
b^2 Hydrae	10 48 51.50	11	+0.10	−12.97	301 29 19.6	44.6
ε Corvi	12 5 14.80	11	−0.11	−12.96	299 1 33.7	45.0
γ Corvi	12 10 55.67	11	+0.08	−12.93	304 6 11.4	44.8
β Corvi	12 29 24.06	11	+0.11	−12.99	298 14 45.8	44.7
χ Virginis	12 34 21.05	11	+0.04	−12.97	313 38 43.0	45.5

h 10.655 . . . . *dt* . . . . s −13.005

Hourly rate . . . . + 0.0256

Adopted Equator Point . . . . 321° 5′ 45.06″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
10 26	29.86	64.9	64.2
11 26	29.865	63.1	63.8
12 37	29.885	61.8	64.0

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0				$D=$ Z. D. N. to 1900.0				R			
			304°	305°	306°	307°	304°	305°	306°	307°	304°	305°	306°	307°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
304	+0.085	10 30	−2.606	−2.604	−2.603	−2.605	+23.55	+23.32	+23.09	+22.87	83.43	80.37	77.46	74.71
305	0.079	11 0	2.774	2.771	2.766	2.763	23.30	23.10	22.90	22.69	83.46	80.41	77.50	74.75
306	0.074	11 30	2.926	2.920	2.914	2.908	22.77	22.60	22.44	22.26	83.50	80.44	77.54	74.78
307	+0.069	12 0	3.061	3.052	3.044	3.036	21.97	21.84	21.70	21.56	83.52	80.46	77.55	74.80
		12 30	3.175	3.164	3.153	3.142	20.90	20.81	20.70	20.60	83.54	80.48	77.57	74.82
		13 0	−3.269	−3.255	−3.242	−3.229	+19.60	+19.55	+19.48	+19.42	83.56	80.50	77.59	74.83

1900 APRIL 25. ZONE 204. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	9.0	49.3	51.5	53.7	56.0	58.1	c	31 53.72	302 38	10.0	5.5	III	41.485	11 31 40.29	−18 24 58.97	−18 3208
2	9.0	12.5	14.7	16.9	19.0	21.2	c	33 16.86	304 34	10.0	5.5	III	45.640	11 33 3.43	16 27 33.67	16 3295
3	9.5	35.0	37.3	39.4	41.6	43.8	c	36 39.42	303 46	10.0	6.8	III	44.820	11 36 25.96	17 15 51.23	17 3442
4	9.6	14.8	17.0	19.1	21.3	23.5	c	39 19.14	304 4	10.0	5.7	III	46.650	11 39 5.67	16 57 15.76	16 3316
5	9.0	54.2	56.4	58.5	0.8	2.9	c	40 58.56	303 24	10.0	5.5	III	45.790	11 40 45.08	17 37 34.48	17 3465
6	8.8	30.5	32.6	34.8	37.0	39.2	c	42 34.82	302 40	10.0	5.6	III	42.550	11 42 21.33	18 22 38.85	18 3240
7	8.9	8.4	10.6	12.8	15.0	17.2	c	44 12.80	304 44	10.0	6.3	III	41.910	11 43 59.31	16 18 44.46	16 3331
8	8.3	11.0	13.1	15.0	16.8	19.3	a	46 45.25	302 48	10.0	5.4	I	44.030	11 46 31.73	18 14 8.89	17 3487
9	8.2	45.2	47.4	49.5	51.8	53.9	c	46 49.56	303 26	10.0	5.1	III	41.350	11 46 36.04	17 36 59.67	17 3488
10	9.1	8.8	11.2	13.4	15.6	17.7	c	50 13.34	303 56	10.0	5.8	III	47.010	11 49 59.81	−17 5 9.77	−16 3354
11	8.6	47.9	50.1	52.4	54.7	56.8	c	1 52.38	303 38	10.0	5.7	III	40.495	12 1 38.80	−17 25 15.48	−17 3553
12	9.2	15.5	17.7	19.9	22.1	24.2	c	2 19.88	303 38	"	"	III A	42.370	12 2 6.29	17 21 24.78	17 3555
13	9.0	26.1	28.1	30.0	31.8	34.2	a	6 59.99	304 24	10.0	6.1	I	45.490	12 6 46.39	16 37 36.30	16 3409
14	9.1	7.9	10.1	12.3	14.5	16.6	c	7 12.28	304 10	10.0	6.1	III	41.890	12 6 58.68	16 52 47.35	16 3412
15	9.0	44.4	46.4	48.7	50.9	53.0	c	12 48.68	304 14	10.0	6.2	III	44.150	12 12 35.05	16 48 4.16	16 3432
16	9.1	39.4	41.6	43.8	48.0	49.7	$c_3\ d_2$	18 39.42	303 44	10.0	6.2	V	44.460	12 18 25.76	17 18 1.26	17 3612
17	8.5	48.4	50.5	52.8	55.0	57.1	c	19 52.76	303 0	10.0	5.5	V	45.150	12 19 39.09	18 1 50.72	17 3616
18	9.3	54.0	56.3	58.5	0.6	2.7	c	21 58.42	304 28	10.0	5.5	III	43.890	12 21 44.76	16 34 9.16	16 3465
19	9.4	17.5	19.7	22.0	24.3	26.2	c	25 21.94	302 50	10.0	5.7	III	47.030	12 25 8.24	18 11 13.94	17 3638
20	8.0	28.3	30.4	32.6	34.9	37.1	c	27 32.66	302 50	"	"	III	46.160	12 27 18.96	−18 11 30.77	−17 3644
21	9.1	50.0	52.3	54.5	56.7	58.8	c	27 54.46	303 6	10.0	5.1	V	44.590	12 27 40.76	−17 56 1.68	−17 3647
22	8.6	39.3	41.3	43.1	45.0	47.4	a	31 13.19	304 16	10.0	5.9	I A	41.805	12 30 59.50	16 43 32.99	16 3500
23	9.2	17.4	19.6	21.7	24.0	26.1	c	31 21.76	304 16	"	"	III B	39.010	12 31 8.06	16 50 56.31	16 3501
24	9.4	52.5	54.8	56.7	58.6	0.5	e	31 26.53	303 4	10.0	5.5	VII	43.090	12 31 12.82	17 58 31.53	17 3660
25	9.0	27.7	29.9	32.1	34.3	36.5	c	35 32.10	304 32	10.0	5.7	III	41.240	12 35 18.39	16 30 59.95	16 3517
26	8.8	38.9	41.2	43.4	45.5	47.7	c	37 43.34	302 42	10.0	6.0	III	46.990	12 37 29.60	18 19 15.53	18 3448
27	8.3	12.3	14.5	16.7	18.9	21.1	c	38 16.70	303 20	10.0	6.1	V	41.370	12 38 2.97	17 43 2.37	17 3691
28	9.1	21.7	23.9	26.0	28.3	30.5	c	45 26.08	303 2	10.0	6.0	III B	46.790	12 45 12.31	18 2 32.15	17 3715
29	8.8	52.4	54.9	57.0	59.3	1.4	c	45 57.00	303 2	"	"	V C	44.140	12 45 43.23	18 6 36.76	17 3717
30	8.1	5.4	7.5	9.7	12.0	14.1	c	48 9.74	303 2	"	"	III A	42.570	12 47 55.96	−17 57 24.63	−17 3723

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
31	9.4	5.5	7.6	9.8	12.1	14.2	c	50 9.84	303 2 10.0	6.0	III	43.890	12 49 56.06	−18 0 14.61	−17 3733
32	9.1	4.7	6.8	9.0	11.3	13.4	c	51 9.04	302 56 10.0	6.0	III C	43.985	12 50 55.25	18 12 39.49	17 3736
33	8.9	45.4	47.5	49.8	52.0	54.2	c	51 49.78	302 56 "	"	III A	44.280	12 51 35.99	18 2 52.45	17 3739
34	8.4	52.4	54.5	56.7	58.8	1.0	c	53 56.68	303 52 10.0	6.0	III	42.630	12 53 42.90	17 10 36.19	16 3576
35	8.0	42.7	44.8	47.0	49.2	51.4	c	57 47.02	303 8 10.0	5.5	III	44.660	12 57 33.21	17 54 0.16	17 3757
36	8.2	53.5	55.7	58.0	0.1	2.2	c	58 57.90	303 58 10.0	5.6	III	41.330	12 58 44.10	17 5 1.08	16 3591
37	9.3	38.1	40.2	42.4	44.6	46.8	c	59 42.42	303 40 10.0	5.6	III	43.390	12 59 28.61	17 22 22.81	17 3766
38	9.0	20.0	22.1	24.3	26.5	28.5	c	3 24.28	304 8 10.0	5.5	III	43.480	13 3 10.47	16 54 19.88	16 3604
39	9.2	9.2	11.6	13.7	16.0	18.2	c	5 13.74	303 4 10.0	5.6	III	45.480	13 4 59.91	17 57 44.96	17 3783
40	7.8	45.6	47.6	49.5	51.3	53.8	a	8 19.78	302 44 10.0	5.5	I	45.490	13 8 5.93	−18 17 44.58	−18 3562[1]
41	8.1	15.8	17.8	20.1	22.4	24.6	c	8 20.14	302 44 "	"	III	45.800	13 8 6.29	−18 17 40.12	−18 3562[2]
42	9.2	26.8	29.0	31.2	33.5	35.6	c	9 31.22	303 48 10.0	5.6	V	46.780	13 9 17.38	17 13 19.09	16 3624
43	9.2	43.1	45.2	47.4	49.6	51.8	c	14 47.42	302 46 10.0	5.7	III	42.760	13 14 33.55	18 16 38.51	18 3581
44	......	19.6	21.8	23.9	26.2	28.5	c	17 24.00	304 30 10.0	5.8	III B	37.870	13 17 10.15	16 37 19.56	16 3646
45	9.1	32.1	34.3	36.5	38.8	40.9	c	18 36.52	304 30 "	"	III A	43.580	13 18 22.67	16 29 2.42	16 3651
46	9.2	54.2	56.3	58.6	0.8	2.9	c	18 58.56	304 30 "	"	III B	40.280	13 18 44.71	16 36 33.84	16 3652
47	7.8	58.0	0.1	2.2	4.6	6.7	c	22 2.32	303 38 10.0	5.7	III	43.040	13 21 48.44	17 24 30.75	17 3850
48	9.1	22.5	24.7	26.8	29.2	31.4	c	22 26.92	303 38 "	"	III C	43.485	13 22 13.04	17 30 48.60	17 3851
49	9.0	12.5	14.6	16.7	19.0	21.1	c	29 16.78	304 12 10.0	7.0	III	43.710	13 29 2.89	16 50 15.92	16 3697
50	10.0	......	......	......	......	......	....	....	306 4 10.0	6.5	VII	46.500	13 30 8	−14 57 19.52	−14 3748
51	9.1	49.0	51.1	53.3	55.5	57.6	c	31 53.30	304 30 10.0	6.0	V	42.300	13 31 39.41	−16 32 43.85	−16 3707
52	8.9	58.3	0.4	2.6	4.7	6.9	c	35 2.58	304 4 10.0	6.5	III	42.775	13 34 48.68	−16 58 34.78	−16 3717

Reduction Elements. Zone 204.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 25.3	−0.013	−0.171	+0.098	−0.018	−0.160	+0.130
25.5	−0.022	−0.149	+0.161			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	δ Crateris		γ Crateris		κ Crateris		Lalande 22585		α Virginis		72 Virginis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	306 48 8.00		303 54 7.80		309 14 7.85		311 10 7.90		310 24 8.05		315 4 8.55	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.065	4 11.47	43.985	4 28.86	42.180	3 54.38	41.615	3 43.37		3 59.49	45.395	4 55.59
II Red. to Mer......	.085	5.13	44.015	5.16	.240	5.11	.640	5.09	42.450	5.09	.420	5.06
VI Inclination	.300		.185		.375		.780		.620	−0.64	.570	
VII Refraction.......	.335	1 16.4	.240	1 25.0	.400	1 10.1	.845	1 5.6	.630	1 7.7	.615	57.4

	73 Virginis		*m* Virginis	
	° ′ ″		° ′ ″	
CIRCLE READING.	302 50 7.35		312 50 8.20	
	r	′ ″	r	′ ″
I Microm. Eq......		3 57.04	43.665	4 22.36
II Red. to Mer......		5.17	.690	5.07
VI Inclination	42.410	−1.61	.830	
VII Refraction.......	.465	1 29.1	.880	1 2.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Crateris...........	11 14 33.75	11	−0.01	−10.56	306 51 8.2	45.3
γ Crateris...........	11 20 6.45	11	0.00	−10.53	303 57 16.8	45.1
κ Crateris...........	11 22 20.60	11	−0.02	−10.54	309 16 57.2	45.1
Lalande 22585.....	11 55 50.00	9	−0.03	−10.54	311 12 50.8	46.2
α Virginis	13 20 9.15	11	−0.02	−10.49	310 27 4.3	44.7
72 Virginis	13 25 26.40	11	−0.04	−10.54	315 8 11.8	44.7
73 Virginis	13 26 53.08	11	0.00	−10.53	302 52 38.9	45.9
m Virginis	13 36 35.55	11	−0.03	−10.55	312 53 33.5	45.5

h 11.470..........*dt* .... −10.542 s

Hourly rate .... + 0.0071

Adopted Equator Point.........321° 5′ 45.31″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
11 11	29.855	56.7	55.2
12 23	29.84	54.6	52.8
13 38	29.83	52.6	51.2

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			302°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	s
302	+0.008	11 30	−2.895	−2.888	−2.882	−2.877	−2.871	−2.867
303	+0.004	12 0	3.052	3.043	3.034	3.025	3.017	3.009
304	0.000	12 30	3.187	3.176	3.164	3.154	3.144	3.133
305	−0.004	13 0	3.303	3.289	3.275	3.261	3.249	3.237
306	0.007	13 30	3.396	3.379	3.363	3.347	3.333	3.317
307	−0.011	14 0	−3.462	−3.444	−3.427	−3.408	−3.390	−3.375

APPARENT RIGHT ASCENSION.	$D =$ Z. D. N. to 1900.0						R					
	302°	303°	304°	305°	306°	307°	302°	303°	304°	305°	306°	307°
h m	″	″	″	″	″	″	″	″	″	″	″	″
11 30	+23.49	+23.30	+23.11	+22.92	+22.71	+22.51	91.71	88.27	85.00	81.90	78.94	76.14
12 0	22.67	22.50	22.34	22.18	22.01	21.84	91.88	88.43	85.15	82.05	79.09	76.28
12 30	21.57	21.44	21.32	21.19	21.05	20.91	92.02	88.57	85.29	82.19	79.21	76.40
13 0	20.21	20.12	20.03	19.94	19.84	19.74	92.13	88.67	85.39	82.28	79.30	76.49
13 30	18.61	18.56	18.50	18.46	18.41	18.34	92.24	88.78	85.49	82.38	79.40	76.58
14 0	+16.81	+16.80	+16.79	+16.78	+16.77	+16.75	92.34	88.88	85.59	82.47	79.49	76.66

1900 APRIL 26. ZONE 205. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.5	57.9	0.2	2.2	4.5	6.8	c	42 2.32	302 40 10.0	4.4	III	46.350	11 41 48.64	−18 21 24.79	−18 3239

Reduction Elements. Zone 205.

	OBSERVED.			ADOPTED.		
1900.	c	b	a	c	b	a
	s	s	s	s	s	s
April 26.3....	−0.022	−0.180	+0.148	−0.022	−0.180	+0.148

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ζ Crateris		η Crateris		Lalande 22585		ε Corvi	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	303 14 7.10		304 26 7.50		311 10 7.75		298 58 7.40	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	45.320	4 54.44	45.270	4 53.48	41.595	3 42.15	45.760	5 2.28
II	Red. to Mer......	.370	5.17	.320	5.16	.570	5.09	.770	5.22
VI	Inclination	.510		.470		.700		.880	
VII	Refraction	.560	1 25.4	.500	1 21.7	.760	1 4.2	.980	1 41.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ζ Crateris...........	11 39 55.25	11	0.00	−10.74	303 17 41.3	45.4
η Crateris...........	11 51 8.75	11	0.00	−10.70	304 29 43.4	44.6
Lalande 22585.....	11 55 50.23	11	−0.03	−10.78	311 12 50.8	46.2
ε Corvi.............	12 5 12.67	11	+0.02	−10.77	299 1 33.7	45.5

h		s
11.885.........	dt......................	−10.748
	Hourly rate.............	0.0000
		° ′ ″
	Adopted Equator Point	321 5 45.42

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
11 35	29.67	61.3	62.1
12 30	29.70	59.7	60.7

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0		$D =$ Z. D. N. to 1900.0		R	
			302°	303°	302°	303°	302°	303°
°	s	h m	s	s	″	″	″	″
302	−0.009	11 30	−2.881	−2.875	+23.50	+23.32	89.74	86.38
303	+0.005	12 0	−3.041	−3.031	+22.70	+22.53	89.95	86.58

1900 JUNE 5. ZONE 206. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.			TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′	″	″		r	h m s	° ′ ″	°
1	......	29.4	31.3	33.1	35.0	37.3	a	32 2.94	305 58	10.0	2.5	I A	41.880	12 31 38.43	−15 1 21.14	−14 3543
2	......	32.5	34.7	36.6	38.5	40.4	e	32 6.89	305 58	"	"	VII C	44.470	12 31 42.38	15 10 16.14	14 3544
3	......	22.1	24.3	26.4	30.6	32.3	c_3 d_2	33 22.12	305 58	"	"	V A	44.760	12 32 57.60	15 0 29.25	14 3549
4	......	33.2	35.3	37.5	39.7	41.8	c	36 37.50	306 8	10.0	3.4	V	42.740	12 36 12.96	14 54 22.02	14 3555
5	......	22.8	24.9	27.0	29.2	31.3	c	38 27.04	306 44	10.0	3.2	III	43.260	12 38 2.48	14 18 9.57	14 3563
6	......	16.0	18.2	20.3	22.5	24.6	c	44 20.32	306 4	10.0	2.9	V	44.590	12 43 55.73	14 57 47.40	14 3584
7	7.8	16.6	18.7	20.7	22.9	25.1	c	48 20.80	305 0	10.5	4.0	III	41.040	12 47 56.17	16 2 55.93	15 3551
8	9.0	34.8	37.0	39.1	43.5	45.0	c_3 d_2	50 34.81	304 4	10.0	3.0	V	43.660	12 50 10.15	16 58 10.68	16 3563
9	9.1	47.5	49.6	51.9	54.0	56.1	c	51 51.82	304 32	10.0	3.2	V	45.590	12 51 27.16	16 29 32.35	16 3569
10	8.6	7.0	9.3	11.3	13.5	15.6	c	55 11.34	305 44	10.0	3.1	III C	44.310	12 54 46.67	−15 24 18.97	−15 3573
11	9.0	57.9	0.0	2.2	4.3	6.6	c	56 2.20	305 44	"	"	III A	42.695	12 55 37.53	−15 15 8.59	−15 3577
12	8.3	25.1	27.4	29.5	33.7	35.4	c_3 d_2	56 25.19	305 44	"	"	III A	42.160	12 56 0.51	15 15 18.80	15 3578
13	9.2	2.0	4.1	6.2	8.4	10.5	c	0 6.24	306 2	10.0	3.6	III A	40.990	12 59 41.54	14 57 40.21	14 3636
14	9.4	50.1	52.4	54.3	56.1	58.0	e	0 24.54	306 2	"	"	VII B	42.495	12 59 59.84	15 3 42.76	14 3638
15	9.6	41.8	44.0	46.0	48.3	50.4	c	1 46.10	305 8	10.0	3.1	VI	41.240	13 1 21.38	15 54 54.99	15 3597
16	8.5	42.1	44.4	46.5	48.7	50.8	c	3 46.50	305 24	10.0	3.0	III	43.730	13 3 21.77	15 38 5.15	15 3600
17	8.2	54.4	56.6	58.7	1.0	3.0	c	6 58.74	305 4	10.0	3.4	III	41.100	13 6 33.99	15 58 56.11	15 3611
18	8.0	9.7	11.8	13.9	16.2	18.3	c	9 13.98	305 4	"	"	III B	43.130	13 8 49.21	16 1 31.05	15 3621
19	8.5	22.4	24.5	26.6	28.8	31.0	c	12 26.66	306 18	10.0	3.7	III	41.590	13 12 1.89	14 44 43.77	14 3681
20	8.5	30.7	33.0	35.1	37.1	39.2	c	13 35.02	306 36	10.0	3.8	III	44.435	13 13 10.24	−14 25 48.75	−14 3688
21	8.6	16.1	18.2	20.2	22.6	24.7	c	14 20.36	306 50	10.0	3.5	III	40.770	13 13 55.57	−14 12 58.24	−13 3688
22	8.7	14.8	16.9	19.1	21.4	23.7	c	15 19.18	305 20	10.0	3.0	III	44.150	13 14 54.38	15 41 57.90	15 3643
23	8.4	4.3	6.5	8.6	10.8	12.9	c	20 8.62	305 56	10.0	2.8	V	41.965	13 19 43.80	15 6 39.68	14 3717
24	9.0	15.1	17.3	19.4	21.7	23.8	c	21 19.46	306 46	10.0	3.5	III	42.830	13 20 54.63	14 16 19.59	14 3721
25	9.1	5.9	8.0	10.1	12.3	14.5	c	28 10.16	306 26	10.0	2.9	III	45.085	13 27 45.30	14 35 37.94	14 3741
26	8.9	30.0	32.0	34.2	36.3	38.5	c	29 34.20	306 36	......	......	......	......	13 29 9.32	14 25 4	14 3745
27	9.3	20.5	22.5	24.7	27.0	29.0	c	30 24.74	305 0	10.0	2.1	III	46.990	13 29 59.84	16 1 5.49	15 3700
28	8.7	12.8	14.9	17.0	19.1	21.3	c	31 17.02	306 56	10.0	2.0	III	41.660	13 30 52.13	14 6 42.78	13 3731
29	8.2	0.7	3.0	5.1	9.4	10.8	c_3 d_2	33 0.78	306 14	10.0	4.9	VI	45.050	13 32 35.88	14 47 40.24	14 3760
30	7.8	20.5	22.5	24.8	26.9	29.0	c	39 24.74	306 46	10.0	4.5	III	45.610	13 38 59.80	−14 15 26.89	−14 3787
31	9.2	59.8	1.9	4.0	6.3	8.4	c	50 4.08	305 0	10.0	2.0	III	43.640	13 49 39.07	−16 2 11.11	−15 3768
32	9.0	......	44.7	48.8	50.5	53.0	c_5 d_3	54 40.32	306 10	10.0	4.9	VI	43.760	13 54 15.30	14 52 6.49	14 3845
33	8.7	11.1	13.3	15.5	17.6	19.7	c	59 15.44	305 28	10.0	3.5	III	44,885	13 58 50.39	15 33 45.91	15 3795
34	8.8	19.5	11.7	13.8	16.0	18.1	c	1 13.82	306 14	10.0	3.4	III	47.265	14 0 48.77	−14 46 58.27	−14 3870

Reduction Elements. Zone 206.

	OBSERVED.			ADOPTED.		
1900.	c	b	a	c	b	a
	s	s	s	s	s	s
June 5.2....	+0.074	−0.250	+0.027	+0.062	−0.246	+0.016
5.4....	+0.049	−0.242	−0.005			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi XII. 54		δ Corvi		β Corvi		χ Virginis		89 Virginis		47 Hydrae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	308 2 14.55		305 4 6.15		298 12 5.65		313 36 6.80		303 24 5.80		296 34 5.15	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq.		3 32.11	45.370	4 55.30	43.120	4 12.14		3 27.65		4 26.61	42.390	3 59.28
II | Red. to Mer.	41.060	5.11	.390	5.15	.145	5.23		5.06	43.855	5.15	.495	5.24
VI | Inclination	.140	−0.64	.575		.310		40.890	−1.61	44.065	−0.64	.660	
VII | Refraction	.180	1 11.0	.605	1 19.0	.350	1 43.3	.895	58.4	.045	1 24.7	.680	1 51.6

	40 H. Virginis		κ Virginis	
	° ′ ″		° ′ ″	
CIRCLE READING.	305 12 5.80		311 14 7.00	
	r	′ ″	r	′ ″
I | Microm. Eq.	44.900	4 46.27	41.815	3 47.36
II | Red. to Mer.	.945	5.15	.840	5.09
VI | Inclination	45.110		42.010	
VII | Refraction	.100	1 19.3	.055	1 4.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi XII. 54	12 16 10.24	11	−0.08	−21.54	308 4 40.1	40.5
δ Corvi	12 25 5.83	11	−0.07	−21.59	305 7 47.6	40.7
β Corvi	12 29 32.49	11	−0.04	−21.55	298 14 39.7	40.9
χ Virginis	12 34 29.46	8	−0.10	−21.48	313 38 39.5	41.0
89 Virginis	13 44 51.17	11	−0.06	−21.53	303 27 12.2	40.6
47 Hydrae	13 53 19.49	11	−0.04	−21.50	296 36 18.1	40.9
40 H. Virginis	14 5 47.84	11	−0.07	−21.62	305 15 37.9	41.8
κ Virginis	14 7 58.57	11	−0.09	−21.51	311 16 55.4	40.5

h		s
12.438	*dt*	−21.540
	Hourly rate	0.0000
		° ′ ″
	Adopted Equator Point	321 5 40.86

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
12 19	29.91	72.1	71.0
13 16	29.91	69.6	68.5
14 9	29.915	67.7	66.2

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1900.0				*R*			
			304°	305°	306°	307°	304°	305°	306°	307°	304°	305°	306°	307°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
304	−0.065	12 30	−2.910	−2.901	−2.890	−2.882	+21.93	+21.63	+21.32	+21.01	82.49	79.49	76.61	73.89
305	0.068	13 0	3.115	3.103	3.090	3.078	20.79	20.50	20.21	19.91	82.70	79.69	76.81	74.08
306	0.073	13 30	3.306	3.290	3.274	3.260	19.32	19.06	18.79	18.53	82.93	79.91	77.02	74.28
307	−0.076	14 0	3.480	3.462	3.443	3.426	17.57	17.33	17.09	16.85	83.14	80.11	77.22	74.47
		14 30	−3.632	−3.612	−3.593	−3.571	+15.55	+15.34	+15.14	+14.94	83.37	80.33	77.43	74.68

1900 JUNE 9. ZONE 207. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	......	25.4	27.6	29.7	31.9	34.2	c	58 29.76	303 28 10.0	1.2	III	46.700	12 58 5.05	−17 33 13.28	−17 3760
2	8.5	4.2	6.4	8.5	10.6	12.8	c	0 8.50	303 54 10.0	3.3	III	43.100	12 59 43.78	17 8 20.19	16 3596
3	8.9	43.7	45.9	48.1	50.3	52.4	c	0 48.08	305 44 10.0	3.5	III	40.890	13 0 23.37	15 18 57.40	15 3596
4	8.0	27.1	29.3	31.5	33.7	35.8	c	1 31.48	302 38 10.0	2.2	III	41.780	13 1 6.75	18 24 49.57	18 3540
5	8.6	6.0	8.2	10.4	12.7	14.8	c	4 10.42	303 54 10.0	2.6	III	42.360	13 3 45.67	17 8 34.84	16 3605
6	9.3	38.1	40.3	42.4	44.6	46.8	c	5 42.44	303 40 10.0	3.2	III	44.470	13 5 17.68	17 21 54.94	17 3784
7	8.9	5.3	7.5	9.7	12.0	14.1	c	9 9.72	304 8 10.0	3.2	III	45.220	13 8 44.94	16 53 39.43	16 3620
8	7.0	33.4	35.6	37.7	39.9	42.0	c	12 37.72	306 0 10.0	3.2	III	46.610	13 12 12.93	15 1 8.02	14 3683
9	9.0	18.6	20.8	22.9	25.0	27.4	c	14 22.94	306 0 "	"	III	42.540	13 13 58.14	15 2 26.11	14 3690
10	9.6	55.9	58.2	0.6	2.6	4.8	c	23 0.42	304 30 10.0	3.2	III C	45.240	13 22 35.57	−16 38 4.96	−16 3667
11	8.6	34.5	36.6	38.6	40.7	43.0	c	23 38.68	304 30 "	"	III A	41.895	13 23 13.82	−16 29 27.71	−16 3668
12	8.3	33.0	35.3	37.6	39.8	41.9	c	27 37.52	305 0 10.0	2.8	III	42.880	13 27 12.64	16 2 23.06	15 3692
13	9.2	50.6	52.9	54.9	57.3	59.3	c	28 55.00	305 50 10.0	2.6	III A	41.940	13 28 30.12	−15 9 23.97	−14 3743

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
14	9.5	44.3	46.7	48.7	52.9	54.5	c_3 d_2	29 44.40	305 50 10.0	2.6	III C	40.420	13 29 19.52	−15 19 34.19	−15 3697
15	9.1	50.4	52.4	54.6	56.6	58.5	e	30 24.72	305 0 10.0	3.4	VII	47.080	13 29 59.82	16 1 4.69	15 3700
16	8.4	24.9	27.1	29.4	31.6	33.6	c	32 29.32	305 58 10.0	3.5	III	40.710	13 32 4.41	15 5 1.79	14 3756
17	9.1	39.4	41.6	43.7	46.0	48.1	c	33 43.76	305 14 10.0	4.0	III B	42.510	13 33 18.84	15 51 42.71	15 3709
18	9.2	51.7	53.8	56.0	58.3	0.4	c	37 56.04	305 14 “	“	III A	47.395	13 37 31.10	15 43 40.72	15 3725
19	9.2	28.0	30.1	32.2	34.5	36.6	c	39 32.28	305 14 “	“	III C	40.220	13 39 7.33	15 55 39.37	15 3732
20	9.3	49.7	51.9	54.2	56.4	58.4	c	41 54.12	303 28 10.0	3.1	III	45.260	13 41 29.14	−17 33 42.32	−17 3929
21	9.3	55.9	58.1	0.3	2.4	4.6	c	45 0.26	306 38 10.0	3.5	III	41.015	13 44 35.30	−14 24 55.00	−14 3811
22	9.1	25.7	27.9	30.1	32.3	34.5	c	54 30.10	303 38 10.0	2.0	V A	43.190	13 54 5.05	17 21 9.20	17 3972
23	9.2	40.0	42.4	44.6	46.8	48.9	(c)	1 44.54	303 38 “	“	(III) A	41.720	14 1 19.45	−17 21 36.24	−17 4008

Reduction Elements. Zone 207.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 9.3....	+0.095	−0.301	+0.040	+0.078	−0.312	+0.052
9.4....	+0.062	−0.323	+0.065			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Piazzi XII. 54		δ Corvi		β Corvi		χ Virginis		47 Hydrae		40 H. Virginis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	308 2 6.75		305 4 6.65		298 12 5.50		313 36 6.70		296 34 6.15		305 12 6.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	41.380	3 39.69	45.335	4 54.47	43.070	4 11.72	40.640	3 25.56	42.240	3 55.83	44.800	4 44.16
II Red. to Mer......	.440	5.12	.350	5.15	.170	5.23	.680	5.06	.320	5.24	.820	5.15
VI Inclination	.645		.525		.260		.880		.450		.990	
VII Refraction.......	.640	1 9.9	.560	1 17.8	.335	1 41.8	.930	57.5	.490	1 49.4	45.005	1 17.7

	κ Virginis		ι Virginis	
	° ′ ″		° ′ ″	
CIRCLE READING.	311 14 7.25		315 30 7.30	
	r	′ ″	r	′ ″
I Microm. Eq......	41.780	3 47.02	44.780	4 43.79
II Red. to Mer.....	.875	5.09	.830	5.05
VI Inclination	.980		.950	
VII Refraction.......	42.015	1 2.7	.980	54.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Piazzi XII. 54	12 16 10.31	11	−0.08	−21.66	308 4 41.7	41.8
δ Corvi	12 25 5.80	11	−0.06	−21.60	305 7 48.5	41.5
β Corvi	12 29 32.49	11	−0.02	−21.61	298 14 40.6	41.7
χ Virginis	12 34 29.50	11	−0.10	−21.57	313 38 39.8	41.0
47 Hydrae	13 53 19.49	11	−0.02	−21.56	296 36 17.8	40.6
40 H. Virginis	14 5 47.83	11	−0.06	−21.65	305 15 37.9	41.6
κ Virginis	14 7 58.66	11	−0.09	−21.61	311 16 56.7	41.6
ι Virginis	14 11 11.07	11	−0.11	−21.50	315 34 2.1	40.5

h 12.438............*dt*.................... s −21.610

Hourly rate .... + 0.0183

Adopted Equator Point .... 321° 5′ 41.29″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
12 13	29.80	77.1	77.0
13 14	29.81	75.5	75.4
14 13	29.82	74.9	75.1

Note.

10. Exceedingly faint.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ t'o 1900.0					
			302°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	s
302	−0.045	12 30	−2.875	−2.866	−2.857	−2.848	−2.839	−2.830
303	0.051	13 0	3.092	3.080	3.066	3.054	3.044	3.032
304	0.056	13 30	3.297	3.280	3.264	3.249	3.234	3.219
305	0.061	14 0	3.484	3.465	3.446	3.428	3.411	3.394
306	0.065	14 30	−3.650	−3.629	−3.608	−3.588	−3.567	−3.548
307	−0.070	.. ..	.....	.....	.....	.....	.....	.....

APPARENT RIGHT ASCENSION.	*D* = Z. D. N. to 1900.0						*R*					
	302°	303°	304°	305°	306°	307°	302°	303°	304°	305°	306°	307°
h m	″	″	″	″	″	″	″	″	″	″	″	″
12 30	+22.35	+22.03	+21.71	+21.40	+21.08	+20.76	87.66	84.37	81.25	78.29	75.46	72.78
13 0	21.20	20.90	20.60	20.30	20.00	19.70	87.82	84.53	81.40	78.43	75.60	72.91
13 30	19.71	19.44	19.16	18.88	18.61	18.32	87.90	84.61	81.47	78.51	75.67	72.98
14 0	17.91	17.66	17.41	17.16	16.90	16.65	87.94	84.64	81.51	78.54	75.70	73.01
14 30	+15.83	+15.61	+15.39	+15.17	+14.95	+14.73	87.98	84.68	81.55	78.58	75.74	73.05

1900 JUNE 20. ZONE 208. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	......	44.4	46.5	48.6	50.8	53.0	c	36 48.66	304 44 10.0 2.4	III 43.940	13 36 23.38	−16 18 5.25	−16 3724
2	......	7.6	9.7	11.8	13.7	15.6	e	38 41.66	303 26 10.0 2.0	VII 47.235	13 38 16.36	17 35 8.10	17 3914
3	......	57.1	59.4	1.3	3.3	5.2	e	39 31.44	304 40 10.0 2.2	VII 46.980	13 39 6.14	16 21 9.63	16 3736
4	......	19.5	21.7	23.8	26.0	28.3	c	42 23.86	303 14 10.0 2.6	III 42.610	13 41 58.53	17 48 34.97	17 3931
5	9.0	12.1	14.2	16.0	17.9	20.2	a	52 46.07	304 10 10.0 2.0	I 47.340	13 52 20.70	16 51 0.99	16 3771
6	8.8	6.1	8.3	10.4	12.7	14.8	c	53 10.46	304 24 10.0 2.2	III 46.235	13 52 45.09	16 37 23.08	16 3772
7	8.7	53.8	56.0	58.1	0.4	2.5	c	53 58.16	303 24 10.0 1.7	III 46.920	13 53 32.77	17 37 12.97	17 3970
8	8.5	26.2	28.3	30.5	32.7	35.0	c	55 30.54	302 50 10.0 2.1	III 46.250	13 55 5.13	18 11 27.41	17 3978
9	6.5	58.4	0.6	2.7	4.9	7.0	c	58 2.72	304 8 10.0 2.3	III 47.150	13 57 37.31	16 53 6.42	16 3785
10	8.8	55.2	57.2	59.0	1.0	3.3	a	5 29.43	303 30 10.0 3.1	I 47.150	14 5 3.96	−17 31 6.73	−17 4022
11	8.4	30.8	33.0	35.1	37.4	39.6	c	5 35.18	302 46 10.0 2.8	III 45.930	14 5 9.70	−18 15 34.04	−18 3761
12	8.6	44.4	46.5	48.7	51.0	53.1	c	6 48.74	303 38 10.0 2.6	III 42.400	14 6 23.27	17 24 39.27	17 4025
13	8.7	50.8	52.8	54.6	56.5	58.8	a	9 24.85	303 10 10.0 2.0	I 42.950	14 8 59.36	17 52 29.09	17 4038
14	8.8	44.3	46.6	48.8	51.0	53.2	c	9 48.78	302 52 10.0 1.9	III 47.305	14 9 23.28	18 9 7.92	17 4043
15	6.0	14.5	16.6	18.8	21.1	23.2	c	10 18.84	303 18 10.0 0.0	V 44.500	14 9 53.35	17 44 2.89	17 4046
16	8.8	......	2.2	6.5	8.2	11.1	c_5 d_3	10 57.93	303 4 10.0 1.1	VI 46.345	14 10 32.43	17 57 28.17	17 4049
17	9.0	15.2	17.6	19.6	24.0	25.6	c_3 d_2	12 15.30	303 4 " "	VI B 43.270	14 11 49.79	18 1 40.94	17 4056
18	8.8	48.0	50.2	52.0	53.9	56.4	a	24 22.24	303 14 10.0 2.4	I 43.010	14 23 56.67	17 48 28.39	17 4099
19	9.0	17.1	19.3	21.5	23.7	26.0	c	24 21.52	302 44 10.0 1.8	III A 43.580	14 23 55.93	18 15 5.81	18 3835
20	9.0	31.7	33.8	36.0	38.1	40.4	c	26 36.00	302 44 " "	III A 41.760	14 26 10.40	−18 15 40.65	−18 3843
21	8.0	19.0	21.2	23.4	25.6	27.8	c	27 23.40	302 44 " "	III B 39.600	14 26 57.79	−18 22 50.30	−18 3846
22	9.1	30.6	32.9	35.0	37.3	39.4	c	30 35.04	303 46 10.0 2.5	III 43.360	14 30 9.44	17 16 22.08	17 4119
23	9.3	34.2	36.4	38.6	40.8	42.9	c	32 38.58	303 46 " "	III C 43.640	14 32 12.96	17 22 43.14	17 4128
24	9.0	9.5	11.7	13.7	15.9	18.1	c	35 13.78	303 46 " "	III A 41.770	14 34 48.16	17 13 37.64	17 4142
25	8.9	24.3	26.4	28.5	32.9	34.4	c_3 d_2	35 24.22	303 46 " "	VI B 38.135	14 34 58.60	17 21 17.32	17 4144
26	9.0	36.3	38.5	40.6	42.9	44.9	c	36 40.64	304 10 10.0 2.2	V 47.510	14 36 15.02	16 51 3.05	16 3917
27	7.8	9.5	11.4	13.3	15.2	17.5	a	40 43.43	303 46 10.0 2.5	I 42.885	14 40 17.78	17 16 30.34	17 4172
28	8.7	47.0	49.2	51.4	53.7	55.8	c	40 51.42	304 36 10 0 3.2	III 42.585	14 40 25.78	16 26 34.89	16 3936
29	9.0	0.3	2.3	4.4	6.7	8.9	c	45 4.52	303 8 10.0 2.5	III 45.110	14 44 38.83	17 53 51.38	17 4187
30	6.0	50.9	53.0	54.9	56.8	59.0	a	46 24.98	303 40 10.0 2.8	I 43.040	14 45 59.29	−17 22 27.89	−17 4196
31	9.2	35.3	37.4	39.6	41.8	44.0	c	46 39.62	304 8 10 0 2.7	III 47.700	14 46 13.94	−16 52 58.61	−16 3951
32	9.3	49.3	51.4	53.3	55.2	57.5	a	52 23.44	303 30 10.0 2.9	I 45.540	14 51 57.72	17 31 40.85	17 4219
33	9.0	30.8	32.9	35.1	37.3	39.4	c	52 35.10	303 30 " "	III B 40.130	14 52 9.38	17 36 39.11	17 4220
34	9.0	9.6	11.7	14.0	16.1	18.2	c	56 13.92	304 32 10.0 3.0	III 46.310	14 55 48.20	16 29 24.84	16 3986
35	9.2	7.4	9.5	11.4	13.2	15.5	a	59 41.61	302 50 10.0 1.5	I 45.200	14 59 15.84	18 11 50.59	18 3965
36	8.8	1.0	3.4	5.5	7.8	9.8	c	0 5.50	303 32 10.0 2.0	III 46.675	14 59 39.75	17 29 21.40	17 4249
37	9.2	29.9	32.1	34.2	36.5	38.6	c	2 34.26	304 2 10.0 2.5	III 44.420	15 2 8.51	17 0 3.25	16 4009
38	9.0	46.5	48.7	50.9	53.0	55.2	c	6 50.86	303 12 10.0 2.5	III 47.810	15 6 25.07	17 49 0.75	17 4272
39	9.1	33.4	35.6	37.7	40.0	42.1	c	7 37.76	304 16 10.0 2.6	III 46.230	15 7 11.99	16 45 28.14	16 4029
40	9.3	28.5	30.7	32.7	35.0	37.2	c	8 32.82	302 58 10.0 2.4	III B 46.240	15 8 7.01	−18 6 45.39	−17 4281
41	7.0	10.3	12.5	14.6	16.9	19.0	c	9 14.66	302 58 " "	III 46.970	15 8 48.85	−18 3 17.90	−17 4283
42	9.1	42.7	45.0	47.0	48.9	50.8	e	9 16.78	302 58 " "	VII 45.220	15 8 50.97	18 3 53.94	17 4284
43	9.2	51.5	53.6	55.9	58.1	0.3	c	14 55.88	303 14 10.0 3.2	III B 45.800	15 14 30.05	17 50 53.17	17 4307
44	7.0	34.8	37.0	39.2	41.5	43.5	c	15 39.20	303 14 " "	III 45.610	15 15 13.36	17 47 43.37	17 4312
45	8.9	13.8	16.0	18.0	20.0	21.9	e	15 47.80	302 44 10.0 3.0	V 45.650	15 15 21.95	18 17 45.50	18 4043
46	9.4	31.4	33.7	35.4	37.2	39.6	a	19 5.46	304 4 10.0 3.3	I 46.400	15 18 39.63	16 57 24.68	16 4074
47	9.1	30.5	32.6	34.9	37.0	39.1	c	19 34.82	303 0 10.0 2.5	III 46.670	15 19 8.96	18 1 24.31	17 4325
48	9.5	46.4	48.7	50.8	53.0	55.3	c	20 50.84	302 48 10.0 2.3	III 44.200	15 20 24.97	18 14 12.62	18 4063
49	9.2	42.8	44.8	46.6	48.5	50.8	a	22 16.91	302 48 " "	I 43.870	15 21 51.03	−18 14 17.75	−18 4067

Reduction Elements. Zone 208.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 20.3....	+0.054	−0.311	−0.008	+0.062	−0.281	−0.004
20.4....	+0.069	−0.251	0.000			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		γ Hydrae		α Virginis		73 Virginis		89 Virginis		β Librae		32 Librae	
CIRCLE READING.		° ′ ″ 298 24 6.25		° ′ ″ 310 24 5.80		° ′ ″ 302 50 5.85		° ′ ″ 303 24 5.95		° ′ ″ 312 0 6.55		° ′ ″ 304 40 6.35	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	43.185	4 12.98	42.240	3 55.39	41.860	3 47.93	43.835	4 26.00	47.135	5 29.40	44.255	4 34.11
II	Red. to Mer......	.200	5.23	.250	5.10	.860	5.17	.860	5.17	.195	5.08	.285	5.15
VI	Inclination	.355		.450		42.050		44.050		.335		.480	
VII	Refraction	.360	1 41.7	.470	1 4.9	.070	1 25.5	.080	1 23.9	.360	1 1.9	.500	1 20.6

		37 Librae		41 Librae	
CIRCLE READING.		° ′ ″ 311 18 6.80		° ′ ″ 302 4 5.75	
		r	′ ″	r	′ ″
I	Microm. Eq......	45.770	5 3.62	43.840	4 26.25
II	Red. to Mer......	.860	5.09	.920	5.18
VI	Inclination	46.025		44.030	
VII	Refraction	.015	1 3.5	.085	1 29.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
γ Hydrae...........	13 13 54.21	11	−0.08	−21.97	298 26 42.8	43.0
α Virginis	13 20 20.49	11	−0.12	−21.93	310 27 1.4	40.6
73 Virginis	13 27 4.45	11	−0.10	−22.00	302 52 33.5	41.2
89 Virginis	13 44 51.49	11	−0.10	−21.91	303 27 13.2	41.4
β Librae............	15 12 3.05	11	−0.13	−21.85	312 4 39.1	39.8
32 Librae......	15 23 2.72	11	−0.10	−21.89	304 43 25.0	40.5
37 Librae............	15 29 8.45	11	−0.13	−21.95	311 22 12.0	40.0
41 Librae............	15 33 35.02	11	−0.10	−21.93	302 7 8.2	40.6

h 13.442..........*dt* .... s −21.952

Hourly rate .... + 0.0239

Adopted Equator Point (Interpolated) { h 13.44..... 321° 5′ 41.55″; 15.41..... 321 5 40.22

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
13 11	29.87	74.0	73.8
13 59	29.87	70.8	70.2
14 48	29.87	69.1	68.8
15 35	29.87	67.5	67.1

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0				$D=$ Z. D. N. to 1900.0				R			
			302°	303°	304°	305°	302°	303°	304°	305°	302°	303°	304°	305°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
302	−0.096	13 30	−3.217	−3.201	−3.184	−3.170	+19.58	+19.27	+18.96	+18.64	88.55	85.23	82.07	79.09
303	0.100	14 0	3.422	3.404	3.386	3.367	17.85	17.55	17.26	16.96	88.94	85.61	82.43	79.43
304	0.102	14 30	3.612	3.591	3.570	3.550	15.81	15.55	15.28	15.01	89.10	85.76	82.58	79.58
305	−c.106	15 0	3.781	3.757	3.734	3.711	13.50	13.27	13.03	12.80	89.27	85.92	82.74	79.73
		15 30	−3.928	−3.902	−3.877	−3.852	+10.98	+10.78	+10.57	+10.37	89.45	86.10	82.91	79.89

1900 JUNE 22. ZONE 209. CLAMP WEST.

SKINNER, OBSERVER. KING ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.9	3.0	5.3	7.3	9.6	11.6	c	7 7.36	306 10 10.0	2.6	III	44.570	14 6 41.66	−14 51 49.42	−14 3897
2	8.9	27.0	29.3	31.4	33.6	35.7	c	7 31.40	305 38 10.0	2.4	V	44.380	14 7 5.69	15 23 55.82	15 3824
3	8.7	18.0	20.3	22.4	24.7	26.8	c	8 22.44	305 8 10.0	2.5	III	46.080	14 7 56.73	15 53 23.16	15 3827
4	8.5	15.0	17.1	19.0	20.8	23.0	a	10 48.64	306 24 10.0	3.1	I	41.985	14 10 22.92	14 38 36.76	14 3910
5	8.8	53.9	56.0	58.2	0.5	2.6	c	10 58.24	303 4 10.0	2.7	III	46.105	14 10 32.47	17 57 28.41	17 4049
6	9.3	28.2	30.1	32.0	33.9	36.3	a	14 1.93	305 14 10.0	2.6	I	45.930	14 13 36.18	15 47 24.66	15 3844
7	9.2	0.5	2.7	4.9	7.0	9.2	c	14 4.86	305 44 10.0	3.0	III	46.685	14 13 39.11	15 17 10.11	15 3846
8	9.0	58.4	0.5	2.3	4.1	6.5	a	17 32.11	305 44 "	"	I	46.510	14 17 6.34	15 17 12.28	15 3859
9	9.2	40.1	42.2	44.0	46.0	48.3	a	35 14.16	303 48 10.0	1.4	I	45.540	14 34 48.26	17 13 38.15	17 4142
10	7.8	21.7	23.9	26.0	28.2	30.3	c	35 26.02	305 16 10.0	2.9	III	42.170	14 35 0.13	−15 46 39.44	−15 3924
11	8.7	8.2	10.2	12.3	14.5	16.7	c	44 12.38	306 4 10.0	1.8	III A	41.450	14 43 46.46	−14 55 37.27	−14 4036
12	9.1	52.5	54.7	56.7	59.0	1.1	c	44 56.80	306 4 "	"	V	47.945	14 44 30.88	14 56 49.13	14 4038
13	......	42.3	44.4	46.7	49.0	51.0	c	45 46.68	305 24 10.0	2.0	V	45.695	14 45 20.74	15 37 34.15	15 3966
14	8.2	21.9	23.9	26.0	28.3	30.5	c	47 26.12	306 4 10.0	2.0	V	42.360	14 47 0.19	14 58 36.43	14 4055
15	8.7	18.3	20.5	22.6	24.7	26.9	c	49 22.60	305 2 10.0	1.5	III	47.220	14 48 56.64	−15 59 4.99	−15 3981

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″	r	h m s	° ′ ″	°
16	8.9	22.5	24.8	26.9	29.0	31.0	c	50 26.84	306 6 10.0	2.0	III 43.975	14 50 0.89	—14 56 4.46	—14 4069
17	9.0	2.6	4.6	6.3	8.2	10.4	a	51 36.16	305 48 10.0	1.9	I 45.060	14 51 10.20	15 13 43.08	15 3988
18	8.8	46.4	48.6	50.7	52.9	55.0	c	51 50.72	305 8 10.0	2.0	III 42.870	14 51 24.75	15 54 28.16	15 3989
19	9.1	41.9	44.0	46.0	48.4	50.5	c	52 46.16	305 28 10.0	1.2	III 43.970	14 52 20.18	15 34 6.75	15 3996
20	9.1	17.1	19.2	21.4	23.7	34.2	c_1 d_3	55 21.42	306 0 10.0	2.5	III 43.780	14 54 55.44	—15 2 8.57	—14 4086
21	8.5	28.6	30.7	32.8	35.0	37.1	c	57 32.84	306 38 10.0	3.0	III 43.120	14 57 6.86	—14 24 19.55	—14 4095
22	9.3	32.0	34.2	36.2	38.5	40.7	c	58 36.32	305 4 10.0	3.1	III 46.550	14 58 10.31	15 57 17.76	15 4017
23	9.3	12.8	14.9	17.0	19.3	21.3	c	0 17.06	305 36 10.0	2.8	III 43.330	14 59 51.05	15 26 18.44	15 4021
24	9.2	17.5	19.6	21.3	23.2	25.5	a	1 51.04	306 44 10.0	3.7	I 49.325	15 1 25.04	14 16 18.44	14 4118
25	8.0	45.8	47.9	49.6	51.5	53.7	a	2 19.32	306 44 “	“	I 45.340	15 1 53.32	14 17 35.35	14 4121
26	8.7	16.1	18.3	20.4	22.7	24.7	c	2 20.44	305 6 10.0	2.5	V B 38.450	15 1 54.41	16 1 7.77	15 4032
27	9.4	36.7	38.6	40.4	42.3	44.6	a	5 10.37	305 6 “	“	I B (45).770	15 4 44.33	15 58 45.37	15 4041
28	8.9	6.2	8.2	10.4	12.6	14.7	c	5 10.42	305 6 “	“	III A (41).360	15 4 44.38	15 53 42.80	15 4042
29	9.2	21.0	23.2	25.3	27.5	29.6	c	6 25.32	306 42 10.0	2.5	III 41.490	15 5 59.30	14 20 51.40	14 4139
30	8.5	55.6	57.8	59.8	2.0	4.2	c	9 59.88	306 16 10.0	2.7	III 41.540	15 9 33.83	—14 46 51.68	—14 4155
31	8.2	33.9	36.0	38.2	40.3	42.4	c	10 38.16	306 42 10.0	3.5	III 46.470	15 10 12.12	—14 19 15.91	—14 4160
32	8.8	46.8	48.9	51.1	53.3	55.3	c	12 51.08	306 14 10.0	4.0	III 44.405	15 12 25.02	14 47 56.69	14 4168
33	8.7	47.4	49.5	51.6	53.7	55.9	c	13 51.62	306 30 10.0	3.6	III 46.000	15 13 25.56	14 31 25.67	14 4171
34	8.0	28.8	31.0	33.1	35.3	37.5	c	22 33.14	306 22 10.0	2.6	III A 45.670	15 22 7.03	14 36 18.52	14 4208
35	8.9	46.1	48.4	50.7	52.9	55.1	c	23 50.64	306 22 “	“	III C 45.160	15 23 24.52	14 46 9.72	14 4213
36	8.5	43.9	46.1	48.2	50.3	52.5	c	24 48.20	306 34 10.0	2.9	III 43.700	15 24 22.08	14 28 10.89	14 4218
37	9.0	38.9	41.1	43.2	45.4	47.6	c	25 43.24	306 48 10.0	2.8	III 46.480	15 25 17.12	14 13 17.08	14 4219
38	8.6	46.5	48.6	50.8	52.9	55.0	c	36 50.76	305 48 10.0	2.9	III 42.120	15 36 24.57	15 14 43.99	15 4163
39	8.7	48.8	51.0	53.1	55.3	57.4	c	39 53.12	305 34 10.0	2.6	III 45.520	15 39 26.91	15 27 39.98	15 4176
40	8.2	51.1	53.2	55.4	57.5	59.6	c	41 55.36	306 6 10.0	2.7	III 45.880	15 41 29.16	—14 55 31.78	—14 4277
41	9.5	10.0	12.2	14.0	16.2	17.9	c	44 44.34	305 24 10.0	3.0	III B 48.530	15 44 18.10	—15 39 56.07	—15 4197

Reduction Elements. Zone 209.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 22.3....	+0.036	—0.272	—0.016	+0.054	—0.264	—0.014
22.4....	+0.072	—0.257	—0.011			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	89 Virginis		47 Hydrae		2 Librae		Mayer 575		48 Librae		β Scorpii pr.	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	303 24 4.85		296 34 4.95		309 46 7.00		301 2 5.10		307 2 6.35		301 30 5.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.795	4 25.34	42.350	3 57.11	45.265	4 53.52	44.655	4 41.74	45.985	5 5.14	45.405	4 55.99
II Red. to Mer......	.850	5.17	.360	5.24	.335	5.10	.690	5.19	46.010	5.13	.465	5.18
VI Inclination	44.010		.520		.455		.875			1.61	.605	
VII Refraction.......	.035	1 23.4	.540	1 49.6	.515	1 6.2	.890	1 31.5		1 13.3	.610	1 30.1

	11 Scorpii		α Scorpii	
	° ′ ″		° ′ ″	
CIRCLE READING.	308 34 6.90		294 50 5.20	
	r	′ ″	r	′ ″
I Microm. Eq......	42.185	3 54.99	44.820	4 44.83
II Red. to Mer......	.250	5.11	.875	5.26
VI Inclination	.425		45.000	
VII Refraction.......	.465	1 9.4	.060	1 59.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
89 Virginis	13 44 51.77	11	—0.11	—22.20	303 27 12.0	40.2
47 Hydrae	13 53 20.15	11	—0.08	—22.25	296 36 17.7	40.5
2 Librae	14 18 28.39	11	—0.13	—22.22	309 49 59.4	40.2
Mayer 575	14 29 38.85	11	—0.10	—22.17	301 5 20.5	38.9
48 Librae	15 53 1.44	11	—0.12	—22.19	307 6 4.9	40.0
β Scorpii pr.	16 0 3.63	11	—0.10	—22.25	301 33 36.6	39.7
11 Scorpii	16 2 29.34	11	—0.12	—22.24	308 36 57.6	40.0
α Scorpii	16 23 43.07	11	—0.08	—22.19	294 52 56.1	39.9

h 14.110............	*dt*	s —22.210
	Hourly rate	— 0.0041
	Adopted Equator Point	° ′ ″ 321 5 39.92

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
13 41	29.66	72.9	71.5
14 31	29.66	71.0	69.8
15 20	29.67	69.6	68.7
16 4	29.67	69.3	68.3
16 25	29.68	69.2	68.0

Note.
20, 41. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = *α* to 1900.0					*D* = Z. D. N. to 1900.0				
			303°	304°	305°	306°	307°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	″	″	″	″	″
303	−0.106	14 0	−3.385	−3.366	−3.348	−3.332	−3.314	+17.44	+17.14	+16.84	+16.54	+16.23
304	0.110	14 30	3.574	3.554	3.533	3.512	3.493	15.44	15.16	14.89	14.60	14.33
305	0.114	15 0	3.745	3.721	3.699	3.677	3.656	13.16	12.91	12.67	12.42	12.17
306	0.117	15 30	3.894	3.869	3.844	3.819	3.797	10.67	10.45	10.24	10.02	9.80
307	−0.120	16 0	−4.017	−3.990	−3.965	−3.939	−3.914	+ 7.99	+ 7.82	+ 7.63	+ 7.46	+ 7.28

APPARENT RIGHT ASCENSION.	*R*				
	303°	304°	305°	306°	307°
h m	″	″	″	″	″
14 0	84.90	81.75	78.78	75.93	73.23
14 30	85.07	81.92	78.94	76.08	73.38
15 0	85.21	82.05	79.07	76.21	73.50
15 30	85.31	82.15	79.16	76.30	73.59
16 0	85.35	82.19	79.20	76.33	73.62

1900 JUNE 26. ZONE 210. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		*α* 1900.0	*δ* 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.1	57.9	59.9	1.8	3.6	6.0	a	22 31.82	304 14 10.0	2.8	I	43.630	15 22 5.97	−16 48 17.56	−16 4087
2	6.5	37.7	39.9	42.1	44.3	46.3	c	27 42.06	304 32 10.0	2.2	III	42.040	15 27 16.20	16 30 49.29	16 4110
3	9.0	7.3	9.6	11.8	14.0	16.1	c	29 11.76	303 44 10.0	2.5	III B	43.160	15 28 45.88	17 21 43.65	17 4368
4	9.1	12.8	14.8	17.1	19.4	21.5	c	30 17.12	303 44 “	“	III A	45.960	15 29 51.24	17 14 21.51	17 4372
5	9.0	51.9	54.1	56.3	58.5	0.7	c	31 56.30	303 20 10.0	1.4	III	43.860	15 31 30.40	17 42 18.73	17 4380
6	9.3	......	......	1.5	3.7	5.8	c	33 1.49	303 48 10.0	2.3	III	45.120	15 32 35.59	17 13 52.86	17 4385
7	9.2	9.3	11.4	13.6	15.9	18.0	c	34 13.64	303 6 10.0	2.1	III B	45.180	15 33 47.72	17 59 7.43	17 4393
8	9.2	1.7	3.8	6.1	8.3	10.3	c	35 6.04	303 6 “	“	III A	41.080	15 34 40.12	17 53 57.27	17 4396
9	9.2	44.0	46.2	48.5	50.6	52.9	c	37 48.44	303 38 10.0	1.5	III	48.855	15 37 22.52	17 22 42.14	17 4405
10	9.4	27.0	29.2	31.3	33.6	35.6	c	38 31.34	303 38 “	“	III C	48.915	15 38 5.41	−17 29 7.34	−17 4409
11	9.2	31.0	33.3	35.5	37.5	39.7	c	39 35.40	303 38 “	“	III	47.530	15 39 9.47	−17 23 7.92	−17 4413
12	9.2	42.1	44.2	46.5	48.6	50.7	c	40 46.42	303 10 10.0	3.6	III	46.400	15 40 20.47	17 51 30.12	17 4415
13	9.0	29.5	31.5	33.3	35.2	37.6	a	43 3.62	302 54 10.0	0.5	I	45.540	15 42 37.65	18 7 47.71	17 4427
14	8.9	34.7	36.9	39.0	41.2	43.3	c	45 39.02	303 18 10.0	1.0	III	42.990	15 45 13.05	17 44 36.87	17 4438
15	6.0	29.4	31.7	33.8	36.0	38.2	c	48 33.82	304 36 10.0	2.3	III	44.275	15 48 7.87	16 26 8.22	16 4174
16	9.3	39.2	41.4	43.6	45.8	48.0	c	50 43.60	303 4 10.0	1.3	III	44.910	15 50 17.60	17 58 1.11	17 4452
17	......	......	......	......	......	......	......	....	304 48 10.0	2.4	V	43.710	15 54 43	16 14 20.34	16 4196
18	9.3	42.6	44.5	46.6	48.4	50.7	a	57 16.67	303 28 10.0	2.5	I	41.620	15 56 50.66	17 35 1.28	17 4471
19	9.1	15.1	17.4	19.6	21.7	23.9	c	57 19.54	303 8 10.0	1.7	III	46.280	15 56 53.52	17 53 34.97	17 4472
20	8.0	38.8	41.0	43.2	45.4	47.6	c	59 43.20	302 46 10.0	2.0	III	45.350	15 59 17.16	−18 15 54.05	−18 4228
21	8.1	13.3	15.3	17.1	18.9	21.3	a	2 47.35	303 4 10.0	1.1	I	43.845	16 2 21.31	−17 58 21.25	−17 4494
22	9.0	55.6	57.7	59.8	2.1	4.1	c	2 59.86	304 10 10.0	1.9	III	44.560	16 2 33.83	16 52 5.45	16 4222
23	7.9	14.6	16.8	19.0	21.1	23.4	c	9 18.98	302 46 10.0	1.4	III	42.780	16 8 52.90	18 16 44.47	18 4249
24	9.2	21.7	23.9	26.1	28.3	30.4	c	13 26.08	304 50 10.0	1.6	III	44.980	16 13 0.03	16 11 56.69	16 4265
25	9.2	39.1	41.2	43.5	45.6	47.9	c	14 43.46	303 46 10.0	2.7	III	47.700	16 14 17.39	17 15 6.88	17 4542
26	8.9	29.2	31.3	33.6	35.8	38.0	c	17 33.58	304 6 10.0	1.7	III	47.920	16 17 7.51	16 55 2.45	16 4279
27	9.1	32.2	34.1	36.1	38.0	40.2	a	19 6.21	303 30 10.0	1.6	I	48.755	16 18 40.12	17 30 46.74	17 4562
28	8.8	17.8	19.8	22.1	24.2	26.4	c	19 22.06	303 42 10.0	1.5	III	45.940	16 18 55.97	17 19 42.05	17 4563
29	......	35.4	37.5	39.7	42.0	44.2	c	21 39.76	302 48 10.0	1.6	III	45.840	16 21 13.64	18 13 46.85	18 4282
30	8.7	50.6	52.6	54.5	56.3	58.6	a	23 24.65	303 16 10.0	1.6	I	45.740	16 22 58.54	−17 45 46.03	−17 4580
31	9.6	32.8	34.8	37.0	39.1	41.3	c	23 37.00	304 4 10.0	2.2	III	48.670	16 23 10.91	−16 56 48.36	−16 4288
32	8.0	9.1	11.2	13.4	15.6	17.8	c	36 13.42	303 30 10.0	1.7	III	42.280	16 35 47.27	17 32 54.29	17 4618
33	9.4	12.8	15.0	17.1	19.3	21.3	c	41 17.10	304 20 10.0	2.2	III	43.310	16 40 50.95	16 42 32.44	16 4347
34	9.2	30.4	32.5	34.7	37.0	39.2	c	43 34.76	303 6 10.0	1.8	III	46.030	16 43 8.58	17 55 44.34	17 4637
35	8.6	59.0	1.2	3.3	5.5	7.7	c	44 3.34	304 26 10.0	3.6	V	45.760	16 43 37.19	16 35 46.03	16 4353
36	9.7	46.1	48.3	54.8	56.3	59.0	c_3 d_3	44 46.07	303 4 10.0	2.4	VII	47.765	16 44 19.89	17 57 13.15	17 4641
37	9.3	8.4	10.4	12.7	14.9	17.0	c	51 12.68	303 4 “	“	III	44.010	16 50 46.48	17 58 23.67	17 4663
38	9.1	46.9	49.0	51.3	53.4	55.6	c	54 51.24	302 58 10.0	2.6	III	45.800	16 54 25.03	−18 3 49.87	−17 4677

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
39	8.5	25.3	27.4	33.9	35.6	38.1	$c_3 d_3$	59 25.24	303 12 10.0	2.8	VI	48.350	16 58 59.02	−17 49 2.21	−17 4703
40	9.2	15.0	17.1	19.3	21.5	23.7	c	7 19.32	303 34 10.0	2.1	III	44.380	17 6 53.10	−17 28 16.83	−17 4746
41	9.3	3.1	5.4	7.2	9.3	10.9	e	10 37.31	304 20 10.0	2.8	VII	47.210	17 10 11.09	−16 41 22.46	−16 4459
42	9.5	49.7	51.8	54.0	56.2	58.4	c	12 54.02	304 28 10.0	2.0	III	44.160	17 12 27.80	16 34 19.00	16 4468
43	9.4	22.0	24.3	26.4	28.5	30.8	c	17 26.40	302 56 10.0	1.0	III	47.050	17 17 0.14	18 5 28.98	18 4509
44	.....	.....	.....	.....	.....	.....	.....	....	304 58 10.0	2.4	III	43.260	17 20 37	16 4 35.41	16 4514
45	9.2	0.2	2.3	6.7	8.2	10.9	$c_4 d_3$	23 58.02	304 32 10.0	2.6	VI	43.435	17 23 31.79	16 30 35.33	16 4526
46	9.3	42.5	44.5	46.8	49.0	51.0	c	29 46.76	304 54 10.0	2.2	III	45.230	17 29 20.53	−16 7 58.82	−16 4557

Reduction Elements. Zone 210.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
June 26.5....	+0.083	−0.283	+0.075	+0.083	−0.283	+0.075

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	δ Librae		γ Scorpii		β Librae		32 Librae		η Ophiuchi		ξ Ophiuchi	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	312 54 6.00		296 10 4.75		312 0 5.90		304 40 5.55		305 26 6.35		300 2 4.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.540	4 58.69	41.790	3 46.79	47.225	5 30.89	44.325	4 34.66	44.650	4 41.37	44.805	4 44.23
II Red. to Mer......	.590	5.07	.855	5.25	.283	5.08	.325	5.15	.690	5.14	.835	5.20
VI Inclination	.740		.935		.395		.475		.815		45.000	
VII Refraction.......	.775	59.0	42.020	1 51.2	.435	1 0.9	.510	1 19.2	.880	1 17.1	44.990	1 34.8

	51 Ophiuchi		ξ Serpentis	
	° ′ ″		° ′ ″	
CIRCLE READING.	297 10 6.15		305 42 5.40	
	r	′ ″	r	′ ″
I Microm. Eq......	43.000	4 9.47	44.550	4 40.26
II Red. to Mer......	.010	5.24	.640	5.14
VI Inclination	.170		.775	
VII Refraction.......	.185	1 46.7	.840	1 16.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Librae............	14 56 3.23	11	−0.06	−22.00	312 58 10.8	41.2
γ Scorpii	14 58 38.80	11	+0.03	−22.04	296 12 5.6	41.5
β Librae............	15 12 3.03	11	−0.05	−21.94	312 4 41.0	41.4
32 Librae............	15 23 2.71	11	−0.02	−21.97	304 43 26.2	41.5
η Ophiuchi	17 5 4.69	11	−0.02	−22.02	305 29 35.8	41.2
ξ Ophiuchi	17 15 26.85	11	+0.01	−21.94	300 5 19.4	40.5
51 Ophiuchi	17 25 45.24	11	+0.02	−22.02	297 12 34.2	41.8
ξ Serpentis	17 32 17.77	11	−0.02	−21.99	305 45 34.4	41.7

h 15.122...........*dt*..................... s −21.988

Hourly rate .... − 0.0018

Adopted Equator Point........ 321° 5′ 41.35″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 54	29.70	76.0	73.5
15 46	29.715	75.6	73.8
16 37	29.71	74.7	73.2
17 33	29.70	73.8	72.7

Note.
29. Brighter than sixth magnitude.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A=\alpha$ to 1900.0				$D=$ Z. D. N. to 1900.0				*R*			
			302°	303°	304°	305°	302°	303°	304°	305°	302°	303°	304°	305°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
302	−0.004	15 0	−3.771	−3.748	−3.724	−3.703	+13.36	+13.10	+12.84	+12.56	87.86	84.57	81.43	78.47
303	0.009	15 30	3.931	3.906	3.881	3.855	10.82	10.58	10.35	10.12	87.84	84.55	81.41	78.45
304	0.014	16 0	4.066	4.039	4.011	3.984	8.07	7.89	7.69	7.48	87.86	84.57	81.43	78.47
305	−0.019	16 30	4.175	4.145	4.117	4.090	5.18	5.02	4.87	4.71	87.92	84.63	81.49	78.52
		17 0	4.254	4.225	4.197	4.168	+ 2.21	+ 2.09	+ 1.97	+ 1.85	87.96	84.66	81.53	78.56
		17 30	−4.305	−4.276	−4.246	−4.218	− 0.83	− 0.90	− 0.98	− 1.05	88.00	84.70	81.56	78.59

1900 JULY 2. ZONE 211. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	
1	9.0	16.1	18.1	20.1	22.0	......	a	8 50.12	304 0 10.0 1.0	I A	46.510	15 8 26.04	−16 58 6.56	−16 4034
2	8.9	51.8	53.9	56.0	58.3	0.4	c	8 56.08	304 0 “ “	III C	44.275	15 8 32.00	17 8 32.51	16 4035
3	8.8	46.4	48.6	50.7	52.8	55.0	c	11 50.70	305 50 10.0 2.3	III	42.680	15 11 26.62	15 12 31.44	15 4071
4	8.6	21.8	24.0	26.2	28.1	30.4	c	17 26.10	305 20 10.0 2.8	III	45.920	15 17 2.00	15 41 30.89	15 4089
5	7.9	39.5	41.7	43.9	46.1	48.3	c	29 43.90	304 14 10.0 3.0	III	43.965	15 29 19.70	16 48 12.34	16 4114
6	9.1	55.2	57.5	59.7	1.9	4.1	c	32 59.68	303 48 10.0 2.5	III	44.930	15 32 35.47	17 13 55.59	17 4385
7	8.9	40.4	42.7	44.8	47.0	49.0	c	33 44.78	304 18 10.0 3.0	III	43.040	15 33 20.57	16 44 30.17	16 4129
8	8.0	6.4	8.5	10.4	12.3	14.6	a	52 40.41	304 14 10.0 3.3	I	44.920	15 52 16.10	16 47 54.45	16 4185
9	6.0	55.3	57.3	59.5	1.7	3.8	c	52 59.52	307 2 10.0 3.5	III	46.050	15 52 35.27	13 59 26.86	13 4302
10	7.0	2.7	4.9	7.0	9.3	11.3	c	55 7.04	304 48 10.0 3.0	III	43.640	15 54 42.74	−16 14 19.30	−16 4196
11	8.1	40.3	42.4	44.5	46.7	48.7	c	2 44.52	306 26 10.4 4.1	III	43.280	16 2 20.22	−14 36 21.84	−14 4356
12	8.7	29.4	31.6	33.8	35.9	38.0	c	7 33.74	305 16 10.0 2.3	III	45.995	16 7 9.39	15 45 34.37	15 4266
13	8.5	47.3	49.5	51.6	53.8	55.9	c	23 51.62	306 34 10.0 3.7	III	45.520	16 23 27.23	14 27 40.94	14 4428
14	8.6	40.9	43.0	45.3	47.4	49.5	c	28 45.22	305 42 10.0 3.2	III	47.750	16 28 20.79	15 19 0.94	15 4340
15	9.3	46.0	48.1	50.3	52.4	54.5	c	31 50.26	305 42 “ “	III B	40.880	16 31 25.82	15 24 26.29	15 4354
16	9.1	31.5	33.8	36.0	38.3	40.3	c	2 35.98	303 8 10.0 1.0	III	44.270	17 2 11.38	17 54 19.66	17 4715
17	8.8	4.1	6.3	8.4	10.6	12.7	c	6 8.42	304 38 10.0 3.2	III	50.990	17 5 43.85	16 22 4.84	16 4436
18	9.0	33.0	35.0	37.3	39.5	41.5	c	7 37.26	304 38 “ “	V	46.275	17 7 12.70	16 23 37.40	16 4443
19	9.3	27.9	30.0	32.3	34.3	36.5	c	9 32.20	306 50 10.0 3.5	III A	41.950	17 9 7.68	14 9 38.00	14 4582
20	8.0	52.6	54.7	56.9	59.0	1.2	c	9 56.88	306 50 “ “	V C	42.510	17 9 32.36	−14 19 9.51	−14 4584
21	8.1	1.2	3.4	5.4	7.7	9.8	c	13 5.50	305 56 10.0 3.9	III	46.640	17 12 40.95	−15 5 25.69	−15 4512
22	9.2	59.2	1.4	3.5	5.7	7.8	c	19 3.52	305 24 10.0 3.2	III C	48.070	17 18 38.94	15 43 26.78	15 4539
23	8.7	19.1	21.4	23.4	25.6	27.7	c	21 23.44	305 24 “ “	III	48.180	17 20 58.86	15 36 58.60	15 4551
24	8.9	49.6	51.9	54.0	56.3	58.3	c	22 54.02	305 24 “ “	III	47.020	17 22 29.43	15 37 21.16	15 4557
25	8.8	59.1	1.3	3.5	5.6	7.8	c	25 3.46	303 44 10.0 3.3	III C	47.600	17 24 38.83	17 23 41.25	17 4828
26	9.1	25.1	27.3	29.6	31.8	33.8	c	26 29.52	303 44 “ “	III A	44.700	17 26 4.89	17 14 55.84	17 4838
27	9.0	8.3	10.2	12.2	14.2	16.5	a	31 42.22	304 30 10.0 2.6	I	43.825	17 31 17.59	16 32 24.78	16 4567^1
28	9.1	38.9	41.2	43.4	45.5	47.8	c	31 43.36	304 30 “ “	III	42.955	17 31 18.73	−16 32 42.90	−16 4567^2

Reduction Elements. Zone 211.

1900.	OBSERVED. c	b	a	ADOPTED. c	b	a
	s	s	s	s	s	s
July 2.3....	+0.118	−0.319	+0.006	+0.096	−0.296	−0.049
2.5....	+0.073	−0.274	−0.104			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		δ Librae		γ Scorpii		ι Librae		32 Librae		η Ophiuchi		ξ Ophiuchi	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		312 54 6.85		296 10 5.05		301 38 5.65		304 40 6.40		305 26 6.70		300 2 5.30	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.....	45.400	4 56.32	41.750	3 46 33	42.360	3 57.71	44.245	4 33.38	44.595	4 40.53	44.765	4 43.54
II	Red. to Mer......	.460	5.07	.840	5.25	.410	5.18	.270	5.15	.660	5.14	.805	5.20
VI	Inclination......	.620		.955		.545		.415		.800		.945	
VII	Refraction.......	.670	59.8	.960	1 52.7	.580	1 30.1	.440	1 20.4	.805	1 18.4	.975	1 36.4

		ξ Serpentis		o Serpentis	
		° ′ ″		° ′ ″	
CIRCLE READING.		305 42 6.40		308 12 7.25	
		r	′ ″	r	′ ″
I	Microm. Eq......		4 40.53	46.685	5 20.77
II	Red. to Mer......		5.14	.715	5.12
VI	Inclination......	44.690	−1.61	.905	
VII	Refraction.......	.740	1 17.7	.930	1 11.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Librae	14 56 1.43	11	−0.14	−20.17	312 58 8.4	38.6
γ Scorpii	14 58 37.12	11	−0.09	−20.28	296 12 3.9	39.8
ι Librae	15 6 55.28	11	−0.11	−20.26	301 40 38.4	39.3
32 Librae	15 23 1.05	11	−0.12	−20.24	304 43 24.5	39.6
η Ophiuchi	17 5 3.04	11	−0.12	−20.25	305 29 34.0	39.2
ξ Ophuichi	17 15 25.23	11	−0.10	−20.19	300 5 17.6	38.8
ξ Serpentis	17 32 16.21	11	−0.12	−20.30	305 45 32.8	39.9
o Serpentis	17 36 12.16	11	−0.13	−20.27	308 16 22.1	38.8

h 15.102	*dt*	s −20.238
	Hourly rate	−0.0062
	Adopted Equator Point	° ′ ″ 321 5 39.25

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
14 54	29.99	73.4	71.9
15 39	29.995	72.2	70.8
16 32	29.995	71.2	69.8
17 33	29.995	70.3	68.8

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					
			303°	304°	305°	306°	307°	308°
°	s	h m	s	s	s	s	s	s
303	−0.112	15 0	−3.702	−3.678	−3.657	−3.635	−3.612	−3.592
304	0.115	15 30	3.871	3.845	3.820	3.797	3.774	3.750
305	0.119	16 0	4.018	3.991	3.964	3.939	3.912	3.889
306	0.122	16 30	4.138	4.110	4.082	4.057	4.030	4.005
307	0.125	17 0	4.234	4.205	4.176	4.150	4.122	4.096
308	−0.128	17 30	−4.302	−4.272	−4.244	−4.215	−4.189	−4.162

APPARENT RIGHT ASCENSION.	$D =$ Z. D. N. to 1900.0						R					
	303°	304°	305°	306°	307°	308°	303°	304°	305°	306°	307°	308°
h m	″	″	″	″	″	″	″	″	″	″	″	″
15 0	+13.04	+12.75	+12.46	+12.18	+11.89	+11.60	85.68	82.50	79.50	76.63	73.91	71.28
15 30	10.55	10.30	10.04	9.78	9.52	9.26	85.82	82.64	79.64	76.76	74.03	71.40
16 0	7.87	7.64	7.42	7.20	6.97	6.74	85.92	82.73	79.73	76.84	74.11	71.48
16 30	5.03	4.84	4.65	4.46	4.27	4.08	86.02	82.83	79.82	76.93	74.20	71 56
17 0	+ 2.09	+ 1.93	+ 1.78	+ 1.62	+ 1.48	+ 1.33	86.10	82.91	79.89	77.00	74.27	71.63
17 30	− 0.94	− 1.04	− 1.15	− 1.26	− 1.37	− 1.48	86.20	83.01	79.98	77.09	74.35	71.71

1900 JULY 10. ZONE 212. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.1	23.7	25.8	27.9	30.2	32.4	c	46 28.00	305 24 10.0	2.8	III	47.500	15 46 6.81	−15 37 2.74	−15 4203
[illegible]	9.0	36.4	38.5	40.7	42.8	44.9	c	51 40.66	306 0 10.0	2.4	III	42.950	15 51 19.46	15 2 29.25	14 4316
3	9.1	33.5	35.7	37.8	40.0	42.0	c	52 37.80	306 58 10.0	2.2	III A	39.980	15 52 16.61	14 2 8.56	13 4300
4	8.6	48.5	50.5	52.7	54.9	57.0	c	52 52.72	306 58 "	"	V B	35.440	15 52 31.53	14 10 4.87	14 4321
5	8.6	37.9	40.1	42.4	44.5	46.7	c	5 42.32	306 54 10.0	2.5	III	46.640	16 5 21.07	14 7 17.56	14 4362
6	9.4	26.4	28.4	30.8	33.0	35.0	c	7 30.72	305 58 10.0	0.8	III	42.600	16 7 9.44	15 4 38.32	14 4368
7	8.3	37.9	40.1	42.2	44.4	46.6	c	9 42.24	306 38 10.0	2.0	III	47.190	16 9 20.96	14 23 8.23	14 4379
8	8.5	59.8	2.0	4.1	6.2	8.5	c	18 4.12	306 34 10.0	1.0	III	41.790	16 17 42.80	14 28 53.19	14 4411
9	8.6	10.0	12.2	14.3	16.5	18.5	c	20 14.30	305 10 10.0	0.8	III	46.820	16 19 52.94	15 51 20.73	15 4321
10	9.1	18.4	20.6	22.7	24.9	27.1	c	23 22.74	305 50 10.0	0.9	III	45.230	16 23 1.38	−15 11 49.84	−15 4325
11	9.0	2.3	4.5	6.7	8.8	10.9	c	24 6.64	306 10 10.0	0.7	III	46.485	16 23 45.29	−14 51 25.05	−14 4430
12	9.4	2.0	4.2	6.3	8.5	10.7	c	31 6.34	305 8 10.0	0.5	III	41.860	16 30 44.93	15 54 57.09	15 4350
13	9.1	46.6	48.7	50.9	53.0	55.2	c	35 50.88	306 4 10.0	1.2	III	45.390	16 35 29.47	14 57 47.25	14 4470
14	9.4	58.0	0.2	2.3	4.5	6.6	c	41 2.32	305 46 10.0	1.3	III B	44.590	16 40 40.89	15 19 17.30	15 4388
15	8.3	38.6	40.7	42.9	45.0	47.3	c	44 42.90	305 46 "	"	III	47.350	16 44 21.45	15 15 11.11	15 4397
16	8.6	1.0	3.2	5.3	7.6	9.7	c	51 5.36	305 46 "	"	III B	43.760	16 50 43.89	15 19 34.23	15 4410
17	8.5	3.4	5.6	7.8	10.0	12.2	c	54 7.80	305 24 10.0	0.0	III	43.860	16 53 46.31	15 38 20.78	15 4422
18	9.3	3.7	6.0	8.1	10.2	12.3	c	59 8.06	304 38 10.0	2.1	III	44.800	16 58 46.53	16 24 4.31	16 4411
19	8.6	29.4	31.5	33.7	35.9	38.0	c	1 33.70	304 28 10.0	2.1	III	41.940	17 1 12.16	16 34 59.63	16 4417
20	8.0	32.0	34.0	36.3	38.4	40.6	c	3 36.26	304 16 10.0	1.4	III	44.120	17 3 14.69	−16 46 19.15	−16 4425

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″	r	h m s	° ′ ″	°
21	7.9	3.3	5.3	7.2	9.0	11.3	a	5 37.15	304 32 10.0	1.0	I 43.460	17 5 15.59	−16 30 29.97	−16 4434
22	9.4	33.5	35.8	37.8	40.2	42.3	c	5 37.92	303 0 10.0	0.4	V 45.345	17 5 16.32	18 2 1.38	17 4737
23	8.7	25.0	27.1	29.2	31.5	33.6	c	7 29.28	305 46 10.0	2.6	III 47.730	17 7 7.74	15 15 5.44	15 4485
24	9.0	30.5	32.7	34.8	37.0	39.0	c	8 34.80	305 34 10.0	1.2	III 42.470	17 8 13.26	15 28 47.72	15 4490
25	9.4	50.6	52.8	55.0	57.2	59.3	c	12 54.98	305 24 10.0	1.5	III 42.980	17 12 33.42	15 38 38.74	15 4510
26	9.0	34.5	36.6	38.4	40.2	42.6	a	15 8.44	304 14 10.0	2.0	I 43.550	17 14 46.84	16 48 29.55	16 4480
27	8.6	6.8	8.9	11.0	13.2	15.2	c	15 11.02	305 40 10.0	3.0	V 47.630	17 14 49.46	15 21 9.48	15 4517
28	7.5	8.2	10.5	12.7	14.8	16.9	c	18 12.62	305 6 10.0	1.6	III 43.210	17 17 51.03	15 56 35.66	15 4534
29	9.3	27.9	30.1	32.2	34.6	36.7	c	23 32.30	305 6 "	"	III 44.370	17 23 10.70	15 56 14.01	15 4562
30	8.2	56.3	58.4	0.2	2.2	4.5	a	24 30.16	305 6 "	"	I 44.480	17 24 8.56	−15 56 10.52	−15 4567
31	9.2	16.5	18.6	20.8	23.0	25.2	c	27 20.82	305 14 10.0	1.6	III B 43.610	17 26 59.21	−15 51 42.07	−15 4587
32	8.5	52.0	54.0	55.9	57.6	0.1	a	30 25.74	305 14 "	"	I A 41.370	17 30 4.13	15 45 54.89	15 4606
33	9.0	0.0	2.0	3.9	5.7	......	a	31 33.77	305 14 "	"	I B 40.620	17 31 12.15	15 52 37.80	15 4616
34	9.0	57.0	59.2	1.3	3.5	5.7	c	34 1.34	305 20 10.0	2.8	III 44.510	17 33 39.72	15 42 11.16	15 4635
35	8.8	2.2	4.4	6.5	8.7	10.8	c	36 6.52	305 48 10.0	1.2	III 44.385	17 35 44.91	15 14 13.30	15 4646
36	8.3	54.3	56.5	58.5	0.8	3.0	c	36 58.62	306 4 10.0	1.1	III 47.440	17 36 37.02	14 57 13.96	14 4734
37	7.8	12.9	15.2	17.3	19.5	21.6	c	37 17.30	305 32 10.0	1.1	V 43.310	17 36 55.68	15 30 36.05	15 4655
38	8.5	41.3	43.5	45.7	47.8	50.0	c	40 45.66	304 30 10.0	1.3	III 42.170	17 40 24.00	16 32 59.63	16 4613
39	9.0	41.2	43.4	45.5	47.7	49.9	c	41 45.54	305 34 10.0	1.1	III 43.630	17 41 23.91	15 28 29.01	15 4679
40	9.2	14.3	16.2	18.5	20.7	22.8	c	47 18.50	304 46 10.0	0.8	III 46.290	17 46 56.84	−16 15 40.87	−16 4644
41	9.0	44.7	46.9	48.8	51.0	52.8	e	51 18.98	304 30 10.0	0.3	VII 44.875	17 50 57.30	−16 32 11.86	−16 4661
42	9.1	48.6	50.8	53.0	55.2	57.1	c	52 52.94	304 58 10.0	1.5	III 45.560	17 52 31.27	−16 3 54.58	−16 4669

Reduction Elements. Zone 212.

	OBSERVED.			ADOPTED.		
1900.	c	b	a	c	b	a
	s	s	s	s	s	s
July 10.3....	+0.117	−0.385	−0.056	+0.099	−0.354	−0.072
10.5....	+0.081	−0.323	−0.088			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	η Librae		δ Scorpii		β Scorpii pr.		11 Scorpii		51 Ophiuchi		ξ Serpentis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	305 40 5.55		298 42 4.00		301 30 4.25		308 34 6.20		297 10 5.60		305 42 6.35	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.750	5 21.88	44.960	4 47.81	45.475	4 57.29	42.280	3 55.95	42.920	4 8.68	44.500	4 38.44
II Red. to Mer......	.790	5.14	45.030	5.22	.510	5.18	.310	5.11	.975	5.24	.540	5.14
VI Inclination	.935		.160		.670		.460		43.130		.685	
VII Refraction.......	.990	1 16.6	.230	1 40.4	.695	1 29.8	.475	1 9.2	.170	1 47.7	.700	1 17.1

	Mayer 703		ν Ophiuchi	
	° ′ ″		° ′ ″	
CIRCLE READING.	302 14 4.90		311 16 5.95	
	r	′ ″	r	′ ″
I Microm. Eq......	48.510	5 55.54		4 55.92
II Red. to Mer......	.520	5.18	45.400	5.08
VI Inclination	.715		.550	−0.64
VII Refraction.......	.700	1 27.8	.600	1 3.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
η Librae..........	15 38 47.87	10	−0.17	−17.15	305 44 16.0	40.1
δ Scorpii	15 54 46.48	11	−0.14	−17.17	298 45 16.6	40.1
β Scorpii pr.......	15 59 58.58	11	−0.16	−17.17	301 33 36.9	39.7
11 Scorpii	16 2 24.33	11	−0.18	−17.20	308 36 58.1	39.6
51 Ophiuchi	17 25 40.63	11	−0.14	−17.21	297 12 31.8	39.5
ξ Serpentis	17 32 13.17	11	−0.17	−17.18	305 45 32.8	39.6
Mayer 703	17 50 23.72	11	0.16	−17.15	302 18 37.8	38.7
ν Ophiuchi	17 53 52.78	11	−0.19	−17.23	311 20 3.0	39.4

h 15.900..........	dt.....................	s −17.172
	Hourly rate	− 0.0113
	Adopted Equator Point.........	° ′ ″ 321 5 39.59

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
15 34	29.85	75.8	74.2
16 25	29.86	73.5	72.1
17 9	29.86	72.1	70.9
17 55	29.85	70.9	69.8

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0					D = Z. D. N. to 1900.0				
			303°	304°	305°	306°	307°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	"	"	"	"	"
303	−0.163	15 30	−3.819	−3.793	−3.768	−3.744	−3.721	+10.21	+9.93	+9.64	+9.35	+9.06
304	0.165	16 0	3.981	3.952	3.928	3.902	3.875	7.54	7.29	7.02	6.76	6.49
305	0.169	16 30	4.120	4.091	4.063	4.037	4.010	4.70	4.46	4.24	4.02	3.78
306	0.173	17 0	4.233	4.204	4.176	4.147	4.120	+ 1.74	+1.55	+1.35	+1.16	+0.96
307	−0.176	17 30	4.321	4.291	4.262	4.234	4.206	− 1.30	−1.46	−1.61	−1.76	−1.91
		18 0	−4.380	−4.350	−4.321	−4.293	−4.265	− 4.35	−4.47	−4.58	−4.69	−4.80

APPARENT RIGHT ASCENSION.	R				
	303°	304°	305°	306°	307°
h m	"	"	"	"	"
15 30	84.86	81.72	78.74	75.90	73.19
16 0	85.05	81.91	78.93	76.07	73.36
16 30	85.27	82.12	79.12	76.26	73.55
17 0	85.43	82.26	79.27	76.40	73.69
17 30	85.55	82.37	79.37	76.51	73.79
18 0	85.64	82.47	79.47	76.60	73.87

1900 JULY 13. ZONE 213. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.				TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	°	'	"	"		r	h m s	° ' "	°
1	9.2	33.9	36.3	38.4	40.6	42.7	c	31 38.38	304	30	10.0	2.0	III	43.895	17 31 17.60	−16 32 25.40	−16 4567^1
2	9.3	5.5	7.7	9.6	11.5	13.6	a	31 39.52	304	30	"	"	I	42.820	17 31 18.74	16 32 44.43	16 4567^2
3	9.1	15.0	17.2	19.0	20.9	23.3	a	35 49.24	303	8	10.0	1.5	I	44.390	17 35 28.42	17 54 19.11	17 4886
4	9.1	48.8	50.9	52.7	54.4	57.0	a	36 22.92	303	8	"	"	I	45.520	17 36 2.10	17 53 57.48	17 4892
5	9.0	17.8	20.0	22.2	24.4	26.6	c	36 22.20	303	26	10.0	1.0	V	44.060	17 36 1.38	17 36 27.61	17 4891
6	8.9	21.3	23.4	25.6	27.8	30.0	c	40 25.62	303	26	"	"	III	44.470	17 40 4.79	17 36 18.89	17 4914
7	9.1	12.5	14.6	16.8	18.9	21.0	c	41 16.76	304	8	10.0	1.3	III	43.690	17 40 55.94	16 54 31.69	16 4614
8	9.0	52.6	54.8	57.0	59.2	1.3	c	44 56.98	304	36	10.0	1.2	III	42.330	17 44 36.17	16 26 56.77	16 4627
9	7.5	48.0	50.3	52.4	54.7	56.9	c	46 52.46	304	6	10.0	1.7	III	43.615	17 46 31.63	16 56 33.61	16 4639
10	9.3	......	......	......	......	......	......	....	304	46	10.0	1.8	V	46.310	17 46 57	−16 15 41.27	−16 4644
11	9.1	36.1	38.3	40.3	42.6	44.8	c	51 40.42	302	58	10.0	0.0	III	43.970	17 51 19.57	−18 4 31.57	−18 4715
12	8.0	9.1	11.3	13.5	15.6	17.9	c	57 13.48	303	30	10.0	0.0	III	47.680	17 56 52.63	17 31 19.16	17 4997
13	8.9	36.1	38.5	40.6	42.9	44.9	c	57 40.60	303	4	10.0	1.2	V	43.570	17 57 19.74	17 58 40.25	17 5000
14	9.3	9.1	11.2	13.5	15.6	19.9	c_2 d_1	58 11.26	303	4	"	"	VI B	40.650	17 57 50.39	18 2 50.17	18 4769
15	9.1	53.1	55.0	57.3	59.6	1.6	c	59 57.32	303	48	10.0	1.0	III B	43.690	17 59 36.47	17 17 48.26	17 5011
16	8.8	1.3	3.5	5.7	7.9	10.0	c	1 5.68	303	48	"	"	III	50.050	18 0 44.83	17 12 32.34	17 5020
17	9.4	7.2	9.2	11.5	13.6	15.8	c	4 11.46	303	32	10.0	1.3	III B	46.415	18 3 50.60	17 32 57.04	17 5040
18	9.1	31.3	33.6	35.7	37.9	40.1	c	5 35.72	303	32	"	"	III	44.450	18 5 14.86	17 30 21.46	17 5054
19	8.8	12.3	14.4	16.5	18.8	20.9	c	8 16.58	303	58	10.0	1.0	III C	43.750	18 7 55.72	17 11 0.28	17 5074
20	8.5	43.7	45.8	47.9	50.1	52.4	c	9 47.98	303	58	"	"	III B	42.800	18 9 27.12	−17 8 5.77	−17 5088
21	8.0	13.2	15.4	17.6	19.7	21.7	c	10 17.52	303	58	"	"	III A	47.510	18 9 56.65	−17 0 6.84	−17 5092
22	9.2	1.6	3.7	5.5	7.5	9.7	a	14 35.62	303	58	"	"	I B	49.170	18 14 14.75	17 6 2.09	17 5139
23	8.7	55.5	57.6	59.8	1.8	4.2	c	14 59.78	303	58	"	"	III C	48.825	18 14 38.91	17 9 23.27	17 5142
24	8.1	28.1	30.4	32.6	34.7	36.9	c	15 32.54	303	58	"	"	VI C	41.590	18 15 11.67	17 11 43.45	17 5149
25	9.4	53.9	56.0	58.1	0.2	2.5	c	17 58.14	303	58	"	"	III C	45.470	18 17 37.27	17 10 28.29	17 5175
26	8.4	38.9	41.1	43.2	45.5	47.8	c	21 43.30	303	42	10.0	1.4	III	44.720	18 21 22.42	17 20 17.39	17 5198
27	8.7	19.8	22.0	24.2	26.3	28.5	c	25 24.16	303	42	"	"	III	46.860	18 25 3.28	17 19 36.59	17 5220
28	8.1	40.4	42.6	44.7	47.0	49.0	c	27 44.74	304	6	10.0	1.1	III	48.110	18 27 23.86	16 55 11.66	16 4925
29	9.3	5.1	7.3	9.4	11.8	13.9	c	28 9.50	304	6	"	"	V A	43.180	18 27 48.62	16 53 32.85	16 4931
30	9.2	39.2	41.3	43.1	45.0	47.2	a	32 13.20	303	48	10.0	0.7	I	43.890	18 31 52.32	−17 14 32.91	−17 5268
31	9.1	14.1	16.3	18.5	20.6	22.9	c	32 18.48	303	48	"	"	III	43.560	18 31 57.60	−17 14 40.73	−17 5269
32	9.2	36.0	38.3	40.3	42.6	44.7	c	35 40.38	304	24	10.0	0.3	III	45.470	18 35 19.50	16 38 2.86	16 4981
33	8.0	55.9	58.0	0.2	2.4	4.5	c	38 0.20	304	12	10.0	2.5	III B	46.410	18 37 39.31	16 52 57.99	16 4998
34	9.4	12.3	14.4	16.6	18.8	21.0	c	39 16.62	304	12	"	"	III B	43.610	18 38 55.73	16 53 51.87	16 5006
35	9.3	46.4	48.7	51.1	53.2	55.4	c	39 50.96	304	12	"	"	III B	46.680	18 39 30.07	16 52 52.96	16 5010
36	9.1	45.0	47.1	49.5	......	53.8	c	40 49.41	304	12	"	"	III	43.215	18 40 28.52	16 50 46.07	16 5019

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
37	9.0	14.7	17.0	19.0	21.3	23.3	c	41 19.06	304 12 10.0	2.5	V B	40.070	18 40 58.17	−16 55 0.86	−16 5022
38	8.2	1.4	3.6	5.3	7.1	9.6	a	44 35.58	303 0 10.0	1.2	I	42.270	18 44 14.66	18 3 7.31	18 5093
39	9.3	45.6	47.8	50.0	52.3	54.4	c	48 50.02	304 34 10.0	0.7	III B	41.930	18 48 29.14	16 32 24.68	16 5069
40	9.1	18.0	20.4	22.5	24.8	26.9	c	49 22.52	304 34 "	"	III B	45.650	18 49 1.64	−16 31 13.55	−16 5072
41	9.4	0.9	3.2	5.4	7.7	9.7	c	50 5.38	304 34 "	"	III C	48.285	18 49 44.50	−16 33 35.62	−16 5077
42	8.8	57.3	59.2	1.5	3.8	5.8	c	55 1.52	303 54 10.0	0.8	III	45.790	18 54 40.63	17 7 59.85	17 5410
43	8.6	27.8	29.9	32.1	34.3	36.5	c	56 32.12	303 54 "	"	III C	49.900	18 56 11.23	−17 13 6.93	−17 5423

Reduction Elements. Zone 213.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 13.4....	+0.072	−0.349	−0.063	+0.070	−0.318	−0.072
13.5....	+0.069	−0.288	−0.082			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	24 Ophiuchi		*η* Ophiuchi		*ξ* Ophiuchi		51 Ophiuchi		30 Sagittarii		*λ* Aquilae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	298 4 4.85		305 26 5.60		300 2 4.35		297 10 5.10		298 46 5.30		316 0 5.45	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	41.495	3 40.80	44.665	4 41.78	44.745	4 43.66	42.960	4 9.53	44.745	4 43.08	44.315	4 35.29
II Red. to Mer......	.490	5.23	.735	5.14	.830	5.20	43.020	5.24	.755	5.22	.380	5.05
VI Inclination	.680		.830		.945		.185		.950		.525	
VII Refraction.......	.675	1 43.4	.890	1 17.7	.990	1 35.5	.210	1 47.6	.940	1 40.8	.550	53.6

	π Sagittarii		20 Aquilae	
	° ′ ″		° ′ ″	
CIRCLE READING.	299 52 4.50		312 56 5.75.	
	r	′ ″	r	′ ″
I Microm. Eq......	43.470	4 19.29	43.315	4 15.85
II Red. to Mer......	.520	5.20	.340	5.07
VI Inclination	.700		.510	
VII Refraction.......	.730	1 36.5	.535	59.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
24 Ophiuchi	16 51 6.86	11	−0.16	−16.28	298 6 7.5	40.9
η Ophiuchi	17 4 59.17	11	−0.18	−16.32	305 29 34.8	39.7
ξ Ophiuchi	17 15 21.39	11	−0.16	−16.27	300 5 17.7	38.8
51 Ophiuchi	17 25 39.81	11	−0.15	−16.36	297 12 32.3	40.1
30 Sagittarii	18 45 10.83	11	−0.16	−16.30	298 49 12.8	39.9
λ Aquilae..........	19 1 17.11	11	−0.21	−16.29	316 3 52.2	38.7
π Sagittarii	19 4 9.98	11	−0.16	−16.30	299 54 52.5	39.6
20 Aquilae..........	19 7 35.95	11	−0.20	−16.31	312 59 27.0	39.9

h 17.155...........*dt* .... s −16.308

Hourly rate .... + 0.0044

Adopted Equator Point......... 321° 5′ 39.″70

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
16 49	29.87	73.4	72.2
17 38	29.875	72.3	71.2
18 19	29.88	71.7	70.8
19 6	29.88	71.2	70.2

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	$A = \alpha$ to 1900.0			$D =$ Z. D. N. to 1900.0			*R*		
			303°	304°	305°	303°	304°	305°	303°	304°	305°
°	s	h m	s	s	s	″	″	″	″	″	″
303	−0.172	17 30	−4.336	−4.306	−4.276	− 1.28	− 1.45	− 1.62	85.41	82.24	79.25
304	0.175	18 0	4.402	4.373	4.343	4.35	4.48	4.61	85.51	82.33	79.34
305	−0.178	18 30	4.440	4.409	4.382	7.40	7.49	7.58	85.57	82.39	79.39
		19 0	−4.446	−4.419	−4.390	−10.37	−10.41	−10.46	85.62	82.45	79.45

1900 JULY 16. ZONE 214. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.0	59.7	1.8	3.9	6.0	8.3	c	32 3.94	305 6 10.0 29.6	III	43.640	17 31 43.99	−15 56 25.83	−15 4620
2	8.0	58.8	0.9	2.9	5.1	7.3	c	33 3.00	307 0 10.0 1.1	III	42.490	17 32 43.09	14 2 42.32	14 4707
3	9.3	14.9	17.0	18.8	20.6	23.0	a	36 48.66	305 22 10.0 28.8	I	43.260	17 36 28.70	15 40 31.81	15 4651[1]
4	9.1	44.6	46.7	48.9	51.2	53.2	c	36 48.92	305 22 “ “	III	43.330	17 36 28.96	15 40 31.95	15 4651[2]
5	9.0	37.0	39.3	41.3	43.6	45.7	c	39 41.38	306 12 10.0 0.9	III	42.580	17 39 21.44	14 50 43.32	14 4748
6	8.9	51.2	53.4	55.5	57.7	59.8	c	41 55.52	306 46 10.0 0.7	III	45.550	17 41 35.58	14 15 45.39	14 4768
7	9.0	56.2	58.3	0.4	2.6	4.9	c	43 0.48	305 54 10.0 1.1	III	47.650	17 42 40.52	15 7 7.02	15 4685
8	8.8	43.3	45.5	47.6	49.7	51.8	c	44 47.58	306 50 10.0 1.3	III	44.680	17 44 27.65	14 12 1.92	14 4780
9	8.9	1.1	3.2	5.4	7.5	9.7	c	46 5.38	305 34 10.0 0.5	III	47.210	17 45 45.41	15 27 16.98	15 4699
10	9.1	27.6	29.8	31.8	34.0	36.3	c	46 31.90	305 34 “ “	III	44.340	17 46 11.93	−15 28 12.22	−15 4702
11	9.1	11.2	13.3	15.4	17.6	19.8	c	49 15.46	305 20 10.0 2.1	III	43.030	17 48 55.48	−15 42 37.37	−15 4713
12	9.3	40.2	42.4	44.6	46.9	49.0	c	49 44.62	305 20 “ “	III	42.515	17 49 24.63	15 42 47.24	15 4717
13	8.9	6.7	8.9	11.0	13.3	15.3	c	51 11.04	306 0 10.0 1.6	III	41.830	17 50 51.07	15 2 58.94	15 4728
14	9.4	0.1	2.2	4.5	6.7	8.9	c	55 4.48	305 22 10.0 0.8	III	45.710	17 54 44.48	15 39 47.17	15 4764
15	9.3	0.8	2.9	4.7	6.6	8.9	a	56 34.53	305 42 10.0 1.0	I	44.885	17 56 14.54	15 20 0.72	15 4780
16	8.3	46.0	48.2	50.4	52.5	54.6	c	56 50.34	306 32 10.0 2.0	III	46.040	17 56 30.37	14 29 37.38	14 4860
17	8.8	18.9	21.2	23.2	25.4	27.6	c	59 23.26	306 2 10.0 1.8	III	42.040	17 59 3.27	15 0 55.57	15 4806
18	8.8	7.1	9.3	11.1	12.9	15.4	a	1 40.96	305 26 10.0 2.1	I B	41.600	18 1 20.96	15 40 17.45	15 4819
19	9.2	47.3	49.4	51.6	54.0	55.9	c	1 51.64	305 26 “ “	III A	40.990	18 1 31.64	15 34 2.16	15 4821
20	7.0	18.5	20.6	22.7	24.9	26.9	c	4 22.72	307 4 10.0 1.0	III	47.770	18 4 2.76	−13 57 3.95	−13 4863
21	9.1	48.4	50.7	52.7	55.0	57.2	c	4 52.80	306 50 10.0 2.5	III	47.540	18 4 32.83	−14 11 8.27	−14 4910
22	8.9	48.2	50.3	52.4	54.6	56.9	c	5 52.48	306 36 10.0 1.7	III	43.120	18 5 32.51	14 26 34.25	14 4918
23	8.1	0.0	2.2	4.4	6.5	8.8	c	7 4.38	305 38 10.0 1.5	III	45.680	18 6 44.38	15 23 47.90	15 4864
24	9.1	17.2	19.2	21.5	23.6	25.7	c	8 21.44	306 50 10.0 1.7	III	44.730	18 8 1.47	14 12 3.11	14 4940
25	9.2	11.0	13.1	15.3	17.6	19.7	c	11 15.34	306 20 10.0 2.0	III	46.325	18 10 55.35	14 41 33.84	14 4964
26	8.8	42.8	44.8	46.6	48.4	50.8	a	13 16.23	307 12 10.0 1.0	I	43.730	18 12 56.25	13 50 20.72	13 4926
27	9.1	18.3	20.5	22.4	24.1	26.5	a	13 52.10	305 50 10.0 1.5	I	42.960	18 13 32.09	15 12 38.69	15 4922
28	6.0	9.6	11.6	13.5	15.2	17.5	a	14 43.31	305 10 10.0 0.2	I	44.000	18 14 23.29	15 52 21.32	15 4927
29	9.0	48.2	50.4	52.5	54.6	56.8	c	14 52.50	306 6 10.0 1.1	V A	43.245	18 14 32.50	14 53 20.74	14 5002
30	8.8	36.3	38.7	40.7	42.9	44.9	c	15 40.70	306 6 “ “	III C	48.700	18 15 20.69	−15 1 15.75	−15 4939
31	9.1	5.9	8.0	10.2	12.3	14.5	c	19 10.18	306 12 10.0 1.2	III	46.020	18 18 50.18	−14 49 41.23	−14 5033
32	9.3	3.7	5.9	8.0	10.2	12.4	c	23 8.04	306 48 10.0 1.1	III	46.380	18 22 48.05	[−14 13 33.21]	−14 5067

Reduction Elements. Zone 214.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 16.4....	+0.109	−0.450	−0.007	+0.106	−0.442	−0.047
16.5....	+0.104	−0.435	−0.087			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		24 Ophiuchi		η Ophiuchi		ξ Ophiuchi		51 Ophiuchi		30 Sagittarii		Piazzi XVIII. 260	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		298 4 4.75		305 26 5.55		300 2 3.85		297 10 4.85		298 46 5.20		305 36 5.35	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	41.170	3 35.41	44.520	4 38.54	44.570	4 40.05	42.760	4 5.60	44.480	4 38.48	47.060	5 27.64
II	Red. to Mer......	.225	5.23	.560	5.15	.630	5.20	.810	5.24	.545	5.22	.100	5.14
VI	Inclination	.400		.690		.760		43.000		.695		.230	
VII	Refraction	.410	1 41.3	.675	1 16.1	.800	1 33.5	42.980	1 45.4	.710	1 38.8	.270	1 15.9

		λ Aquilae		π Sagittarii	
		° ′ ″		° ′ ″	
CIRCLE READING.		316 0 5.95		299 52 4.50	
		r	′ ″	r	′ ″
I	Microm. Eq......	44.100	4 31.14	43.270	4 14.97
II	Red. to Mer......	.150	5.05	.300	5.20
VI	Inclination	.290		.470	
VII	Refraction	.360	52.6	.475	1 34.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED Ċ. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
24 Ophiuchi	16 51 6.05	11	−0.16	−15.49	298 6 4.1	37.5
η Ophiuchi	17 4 58.39	11	−0.20	−15.53	305 29 33.1	37.8
ξ Ophiuchi	17 15 20.61	11	−0.17	−15.50	300 5 15.6	36.8
51 Ophiuchi	17 25 38.93	11	−0.15	−15.50	297 12 30.3	38.2
30 Sagittarii	18 45 10.01	11	−0.16	−15.47	298 49 10.1	37.3
Piazzi XVIII. 260.	18 56 10.65	11	−0.20	−15.43	305 40 22.2	37.5
λ Aquilae	19 1 16.31	11	−0.25	−15.42	316 3 49.5	35.7
π Sagittarii	19 4 9.17	11	−0.17	−15.45	299 54 50.1	37.2

h 17.155 .... *dt* .... s −15.505
Hourly rate .... + 0.0352

Adopted Equator Point .... 321° 5′ 37.25″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
16 49	29.86	84.2	82.9
17 38	29.86	82.6	81.6
18 59	29.865	81.6	80.3

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0				*D* = Z. D. N. to 1900.0				*R*			
			305°	306°	307°	308°	305°	306°	307°	308°	305°	306°	307°	308°
°	s	h m	s	s	s	s	″	″	″	″	″	″	″	″
305	−0.194	17 30	−4.266	−4.237	−4.209	−4.183	−1.63	−1.82	−2.01	−2.19	77.64	74.84	72.18	69.62
306	0.198	18 0	4.340	4.311	4.283	4.256	4.62	4.77	4.91	5.05	77.73	74.92	72.26	69.70
307	0.204	18 30	−4.387	−4.359	−4.332	−4.305	−7.59	−7.68	−7.79	−7.89	77.80	74.99	72.33	69.76
308	−0.208	.....	.....	.....	.....	.....	....	....	....	....	.....	.....	.....	.....

1900 JULY 27. ZONE 215. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.2	57.0	59.2	1.4	3.6	5.7	c	35 1.38	303 50 10.0 0.3	III 42.990	17 34 46.27	−17 12 44.88	−17 4883
2	8.9	30.3	32.5	34.7	37.0	39.0	c	36 34.70	304 36 10.0 0.2	III 41.975	17 36 19.60	16 27 2.31	16 4592
3	8.8	7.7	9.8	11.9	14.2	16.4	c	47 12.00	304 46 10.0 0.4	V 46.340	17 46 56.87	16 15 40.59	16 4644
4	9.1	41.4	43.6	45.8	47.9	50.1	c	0 45.76	304 20 10.0 0.0	III 46.115	18 0 30.56	16 41 46.51	16 4706
5	8.8	18.1	20.3	22.4	24.7	26.8	c	3 22.46	304 2 10.0 1.8	III 43.800	18 3 7.23	17 0 31.17	17 5037
6	8.6	28.8	31.0	33.1	35.3	37.5	c	4 33.14	303 48 10.0 0.5	III 47.395	18 4 17.91	17 13 23.51	17 5044
7	7.8	42.5	44.6	46.5	48.3	50.7	a	7 16.46	304 26 10.0 0.2	I 45.460	18 7 1.24	16 35 57.92	16 4754
8	9.2	13.0	15.2	17.3	19.5	21.6	c	7 17.32	304 42 10.0 1.3	V 47.955	18 7 2.10	16 19 11.33	16 4755
9	9.2	43.8	46.2	48.1	50.1	51.8	e	7 18.18	304 42 " "	VII 50.700	18 7 2.96	16 18 19.32	16 4756
10	9.3	53.9	55.9	57.7	59.6	2.0	a	10 27.68	305 0 10.0 0.5	I 44.850	18 10 12.44	−16 2 8.27	−16 4778
11	9.5	33.3	35.7	37.9	40.0	42.3	c	14 37.84	304 0 10.0 0.6	III C 42.110	18 14 22.57	−17 9 31.59	−17 5140
12	9.3	23.0	25.2	27.1	29.1	31.0	e	14 57.13	304 0 " "	VII C 44.910	18 14 41.86	17 8 39.62	17 5143
13	8.9	40.8	43.0	45.1	47.0	48.9	e	16 15.03	304 0 " "	VII A 43.940	18 15 59.76	16 59 18.19	17 5157
14	8.9	32.0	34.2	36.3	38.2	39.9	e	17 6.12	303 32 10.0 0.7	VII(A)(43).450	18 16 50.84	17 27 28.98	17 5164
15	8.9	47.0	49.1	51.3	53.4	55.5	c	19 51.26	304 28 10.0 0.5	III 46.090	18 19 35.99	16 33 48.35	16 4864
16	8.7	37.5	39.8	42.0	44.1	46.2	c	22 41.92	304 56 10.0 0.5	III 46.450	18 22 26.64	16 5 40.42	16 4887
17	8.4	56.3	58.3	0.6	2.9	5.0	c	25 0.62	304 20 10.0 1.9	III 45.170	18 24 45.33	16 42 6.27	16 4905
18	8.1	47.0	49.0	51.3	53.5	55.6	c	28 51.28	304 2 10.0 2.2	III 42.700	18 28 35.96	17 0 54.65	17 5240
19	8.8	24.8	26.9	29.0	31.3	33.4	c	34 29.08	304 12 10.0 1.0	III 46.530	18 34 13.76	16 49 41.91	16 4971
20	9.3	54.3	56.5	58.7	0.9	3.1	c	39 58.70	304 26 10.0 0.9	III 44.420	18 39 43.36	−16 36 22.40	−16 5013
21	8.9	24.8	26.9	29.1	31.4	33.5	c	42 29.14	304 0 10.0 29.6	III A 43.210	18 42 13.79	−16 59 32.67	−17 5319
22	8.0	7.6	9.9	11.8	14.0	16.2	c	43 11.90	304 0 " "	III C 44.720	18 42 56.54	17 8 45.19	17 5324
23	8.0	6.6	8.9	11.0	13.3	15.3	c	45 11.02	304 10 10.0 0.5	III 44.410	18 44 55.66	16 52 24.11	16 5046
24	8.5	2.0	4.2	6.3	8.5	10.7	c	50 6.34	303 10 10.0 29.8	III 44.740	18 49 50.94	17 52 21.63	17 5378
25	8.6	45.5	47.7	50.0	52.3	54.5	c	50 50.00	303 26 10.0 0.1	III 43.040	18 50 34.61	17 36 53.26	17 5386
26	9.3	39.5	41.7	43.7	46.0	48.3	c	52 43.84	303 2 10.0 29.7	III B 43.870	18 52 28.43	18 3 52.54	18 5147
27	7.9	49.8	51.9	54.1	56.4	58.5	c	53 54.14	303 2 " "	III 42.860	18 53 38.72	18 0 58.46	18 5156
28	7.8	13.8	15.9	18.0	20.4	22.5	c	56 18.12	303 32 10.0 29.8	III 47.290	18 56 2.71	17 29 32.08	17 5419
29	9.4	57.5	59.7	1.8	4.0	6.2	c	57 1.84	305 8 10.0 0.2	III 45.660	18 56 46.47	15 53 58.72	15 5192
30	......	14.8	16.9	19.2	21.3	23.5	c	59 19.14	304 6 10.0 0.5	III B 41.690	18 59 3.75	−17 0 31.15	−17 5454
31	9.2	38.0	40.2	42.4	44.5	46.8	c	59 42.38	304 6 " "	V 44.335	18 59 26.99	−16 56 28.49	−17 5458
32	8.4	26.6	28.8	31.0	33.1	35.4	c	2 30.98	303 12 10.0 0.0	III 47.215	19 2 15.55	17 49 35.08	17 5487
33	8.6	18.9	20.9	23.1	25.3	27.4	c	4 23.12	304 14 10.0 1.2	III 45.060	19 4 7.72	16 48 13.04	16 5178
34	8.8	41.9	43.9	46.2	48.3	50.5	c	5 46.16	305 20 10.0 0.9	III 43.350	19 5 30.78	15 42 42.96	15 5263
35	8.6	18.6	20.8	23.0	25.2	......	c	7 22.99	303 50 10.0 0.1	III A 42.490	19 7 7.57	17 9 49.17	17 5522
36	8.7	9.5	11.7	13.7	16.1	18.2	c	9 13.84	303 50 " "	III 48.010	19 8 58.42	−17 11 18.43	−17 5534

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
37	7.8	27.9	30.2	32.3	34.6	36.7	c	11 32.34	303 54 10.0 0.3	V C 47.960	19 11 16.91	−17 13 46.47	−17 5555
38	8.7	5.9	8.0	10.3	12.5	14.6	c	14 10.26	303 54 " "	III B 45.000	19 13 54.83	17 11 30.09	17 5584
39	9.0	3.6	5.9	7.9	10.2	12.3	c	18 7.98	303 14 10.0 0.4	III 47.975	19 17 52.53	17 47 21.66	17 5608
40	8.8	25.8	27.9	30.0	32.5	34.5	c	19 30.14	303 14 " "	III B 40.330	19 19 14.67	−17 53 1.71	−17 5618
41	8.0	44.6	46.8	49.1	51.2	53.5	c	19 49.04	304 0 10.0 29.7	V 46.450	19 19 33.60	−17 1 50.54	−17 5621
42	9.1	39.8	42.1	44.2	46.4	48.5	c	22 44.20	304 40 10.0 0.0	....	19 22 28.78	16 24 51	16 5320
43	9.2	9.0	11.1	13.2	15.4	17.5	c	24 13.24	304 40 " "	III 48.050	19 23 57.82	16 21 16.72	16 5332
44	9.3	58.1	0.3	2.4	4.6	6.7	c	27 2.42	304 40 " "	III C 43.910	19 26 46.99	16 29 2.95	16 5345
45	8.8	50.1	52.3	54.4	56.6	58.8	c	34 54.44	305 0 10.0 0.5	III 44.680	19 34 39.00	16 2 21.43	16 5398
46	5.5	59.1	1.2	3.3	5.5	7.6	c	37 3.34	304 40 10.0 0.4	III 47.450	19 36 47.89	−16 21 29.34	−16 5413

Reduction Elements. Zone 215.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 27.3....	+0.111	−0.320	−0.060	+0.111	−0.314	−0.028
27.5....	+0.111	−0.307	+0.005			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	51 Ophiuchi		ξ Serpentis		Mayer 703		ν Ophiuchi		υ Sagittarii		*h* Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	297 10 5.00		305 42 5.15		302 14 4.95		311 16 5.10		304 54 5.25		295 56 4.65	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42.900	4 8.12	44.545	4 39.29	48.485	5 55.43	45.385	4 55.49	43.880	4 26.69	46.665	5 18.64
II Red. to Mer.....	.965	5.24	.600	5.14	.540	5.18	.440	5.09	.920	5.15	.730	5.25
VI Inclination	43.120		.695		.670		.565		44.070			1.61
VII Refraction......	.095	1 47.7	.760	1 17.2	.725	1 28.0	.590	1 3.4	.100	1 20.0		1 54.3

	κ Aquilae		*f* Sagittarii	
	° ′ ″		° ′ ″	
CIRCLE READING.	313 46 5.40		301 2 4.50	
	r	′ ″	r	′ ″
I Microm. Eq.....		5 42.67	46.110	5 9.43
II Red. to Mer......		5.06	.140	5.19
VI Inclination	47.920	−1.61	.310	
VII Refraction.......	.970	58.3	.320	1 32.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
51 Ophiuchi	17 25 34.02	11	−0.06	−10.71	297 12 30.7	38.6
ξ Serpentis	17 32 6.58	11	−0.10	−10.70	305 45 32.4	38.6
Mayer 703	17 50 17.20	11	−0.08	−10.71	302 18 37.6	38.3
ν Ophiuchi	17 53 46.29	11	−0.12	−10.81	311 20 2.3	37.5
υ Sagittarii	19 16 15.44	10	−0.10	−10.85	304 57 17.1	38.5
h Sagittarii	19 30 52.99	11	−0.06	−10.87	295 59 35.9	38.5
κ Aquilae...........	19 31 45.95	11	−0.13	−10.86	313 50 53.2	38.2
f Sagittarii	19 40 47.25	11	−0.08	−10.85	301 5 46.5	37.9

h 17.678..........*dt*...................... s −10.732

Hourly rate .... − 0.0692

Adopted Equator Point......... 321° 5′ 38.26″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 23	29.94	72.7	72.0
18 0	29.94	71.3	70.1
19 1	29.945	70.3	69.1
19 38	29.95	69.6	68.3

Note.

8. Faint companion preceding.

REDUCTION TABLES FOR THE ZONE STARS.

INSTRUMENTAL CORRECTIONS.		APPARENT RIGHT ASCENSION.	*A* = α to 1900.0					*D* = Z. D. N. to 1900.0				
			303°	304°	305°	306°	307°	303°	304°	305°	306°	307°
°	s	h m	s	s	s	s	s	″	″	″	″	″
303	−0.088	17 30	−4.299	−4.267	−4.240	−4.210	−4.182	− 1.54	− 1.77	− 2.02	− 2.25	− 2.48
304	0.092	18 0	4.399	4.369	4.340	4.310	4.283	4.62	4.82	5.02	5.22	5.42
305	0.095	18 30	4.473	4.443	4.414	4.385	4.358	7.70	7.87	8.03	8.18	8.35
306	−0.099	19 0	4.519	4.488	4.459	4.433	4.407	10.72	10.85	10.97	11.09	11.21
		19 30	4.535	4.507	4.480	4.455	4.428	13.63	13.71	13.80	13.87	13.95
		20 0	−4.523	−4.496	−4.471	−4.446	−4.423	−16.39	−16.43	−16.47	−16.51	−16.54

APPARENT RIGHT ASCENSION.	R			
	303°	304°	305°	306°
h m	"	"	"	"
17 30	85.59	82.41	79.41	76.54
18 0	85.84	82.66	79.66	76.77
18 30	85.94	82.75	79.74	76.86
19 0	86.04	82.85	79.84	76.95
19 30	86.14	82.95	79.92	77.04
20 0	86.24	83.05	80.02	77.13

1900 JULY 28. ZONE 216. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ' " "	r	h m s	° ' "	°
1	9.2	22.9	25.2	27.4	29.5	31.7	c	53 27.34	304 42 10.0 0.7	III 47.190	17 53 12.22	−16 19 23.26	−16 4673
2	9.4	38.2	40.5	42.4	44.7	46.9	c	1 42.54	305 58 10.0 0.5	III 45.790	18 1 27.42	15 3 47.78	15 4820
3	8.9	29.0	31.0	33.3	35.4	37.6	c	3 33.26	304 36 10.0 0.3	III 48.225	18 3 18.10	16 25 4.81	16 4724
4	8.9	6.2	8.4	10.6	12.8	14.8	c	5 10.56	304 18 10.0 0.9	III 45.550	18 4 55.39	16 43 57.08	16 4739
5	8.8	47.7	49.7	52.0	54.1	56.3	c	9 51.96	304 12 10.0 0.4	V 46.910	18 9 36.78	16 49 33.18	16 4773
6	8.2	9.6	11.5	13.5	15.2	17.6	a	15 43.40	304 36 10.0 0.5	I 47.830	18 15 28.21	16 25 12.10	16 4829
7	8.3	43.8	46.0	48.0	50.3	52.5	c	15 48.12	304 36 " "	III 48.220	18 15 32.93	16 25 6.07	16 4830
8	9.0	1.5	3.7	5.9	8.0	10.3	c	17 5.88	303 32 10.0 29.2	V A 43.410	18 16 50.66	17 27 28.79	17 5164
9	8.9	42.1	44.4	46.3	48.4	......	e	17 16.26	303 32 " "	VII 46.660	18 17 1.04	17 29 42.40	17 5167
10	8.1	17.6	19.9	21.9	24.2	26.3	c	19 21.98	304 46 10.0 0.5	III B 43.720	18 19 6.78	−16 19 46.04	−16 4861
11	9.3	11.2	13.5	15.5	17.8	20.0	c	20 15.60	304 46 " "	V 47.710	18 20 0.40	−16 15 17.20	−16 4868
12	9.3	14.7	16.7	18.9	21.0	23.3	c	29 18.92	304 50 10.0 0.3	III 43.630	18 29 3.70	16 12 35.20	16 4936
13	8.7	8.3	10.5	12.6	14.8	16.9	c	30 12.62	305 14 10.0 0.5	III 44.960	18 29 57.41	15 48 8.60	15 5024
14	9.1	3.0	5.2	7.3	9.5	11.7	c	34 7.34	305 52 10.0 0.4	III 42.940	18 33 52.14	15 10 46.01	15 5048
15	9.1	7.1	9.3	11.4	13.5	15.6	c	46 11.38	305 40 10.0 0.3	III A 47.480	18 45 56.16	15 18 5.60	15 5125
16	8.0	23.1	25.3	27.4	29.6	31.8	c	47 27.44	305 40 " "	III C 50.040	18 47 12.21	15 26 57.55	15 5132
17	8.2	14.8	16.9	18.9	21.2	23.3	c	49 19.02	305 40 " "	III 47.960	18 49 3.79	15 21 11.69	15 5146
18	7.8	9.6	11.9	13.9	16.2	18.3	c	50 13.98	304 34 10.0 0.5	III 43.920	18 49 58.73	16 28 32.47	16 5083
19	7.8	15.0	17.1	19.3	21.5	23.6	c	51 19.30	306 2 10.0 1.0	III 47.710	18 51 4.08	14 59 15.39	15 5154
20	9.3	29.7	31.9	34.2	36.4	38.6	c	54 34.16	304 40 10.0 29.6	III 48.150	18 54 18.90	−16 21 11.68	−16 5109
21	9.0	47.7	49.9	52.0	54.1	56.3	c	56 52.00	305 20 10.0 0.2	III 48.310	18 56 36.75	−15 41 6.65	−15 5190
22	8.9	31.4	33.5	35.6	37.7	40.0	c	0 35.64	305 20 " "	III C 45.630	19 0 20.39	15 48 24.98	15 5225
23	9.0	53.4	55.4	57.3	59.0	1.5	a	3 27.23	304 40 10.0 29.9	I 43.810	19 3 11.97	16 22 34.42	16 5169
24	8.5	46.6	48.7	50.9	53.1	55.3	c	5 50.92	305 32 10.0 0.6	V 45.045	19 5 35.67	15 30 10.98	15 5264
25	9.3	8.3	10.2	12.5	14.7	16.9	c	8 12.52	305 32 " "	III C 45.315	19 7 57.26	15 36 31.00	15 5278
26	9.1	10.9	13.1	15.2	17.3	19.5	c	9 15.20	305 32 " "	III B 44.595	19 8 59.94	15 33 32.13	15 5284
27	8.3	15.5	17.6	19.7	21.8	24.0	c	10 19.72	304 34 10.0 0.0	III 48.160	19 10 4.45	16 27 13.12	16 5223
28	9.0	33.0	35.2	37.2	39.4	41.7	c	12 37.30	306 6 10.0 0.9	III 46.470	19 12 22.06	14 55 41.24	15 5304
29	9.1	46.7	49.0	51.1	53.2	55.3	c	13 51.06	305 48 10.0 29.8	III 48.425	19 13 35.81	15 13 4.98	15 5312
30	9.0	52.1	54.2	56.1	58.1	59.9	e	17 26.22	304 28 10.0 0.6	VII B 43.235	19 17 10.94	−16 38 4.61	−16 5289
31	9.0	35.3	37.5	39.7	41.9	44.0	c	18 39.68	304 28 " "	V (A) 47.010	19 18 24.40	−16 30 22.49	−16 5296
32	9.2	30.9	33.0	35.1	37.1	38.8	e	19 5.09	304 16 10.0 0.6	V 44.310	19 18 49.80	16 46 29.94	16 5300
33	9.1	6.1	8.1	10.3	12.5	14.7	c	21 10.34	304 56 10.0 0.5	III 46.610	19 20 55.06	16 5 42.78	16 5310
34	9.3	35.0	37.0	39.2	41.4	43.4	c	21 39.20	305 32 10.0 0.4	V 45.380	19 21 23.93	15 30 6.14	15 5354
35	8.9	39.7	41.8	44.0	46.2	48.2	c	22 43.98	304 36 10.0 0.1	III 49.360	19 22 28.70	16 24 50.96	16 5320
36	8.9	42.8	44.9	47.1	49.2	51.4	c	23 47.08	304 24 10.0 0.0	III 47.950	19 23 31.79	16 37 18.95	16 5329
37	9.1	35.4	37.6	39.7	41.9	44.0	c	26 39.72	306 6 10.0 1.3	III 47.540	19 26 24.47	14 55 21.73	15 5379
38	9.1	31.0	33.2	35.2	37.5	39.7	c	28 35.32	305 46 10.0 0.6	III 45.490	19 28 20.06	−15 16 2.64	−15 5392

Reduction Elements. Zone 216.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
July 28.4....	+0.129	−0.367	+0.009	+0.116	−0.352	−0.020
28.5....	+0.103	−0.338	−0.050			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ξ Serpentis		o Serpentis		Mayer 703		μ Sagittarii		π Sagittarii		υ Sagittarii	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	305 42 5.35		308 12 5.50		302 14 4.15		299 58 4.35		299 52 4.10		304 54 5.40	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.530	4 38.79	46.805	5 22.64	48.540	5 56.10	42.610	4 3.07	43.460	4 18.54	43.810	4 25.51
II Red. to Mer.	.565	5.14	.850	5.12	.560	5.18	.690	5.20	.480	5.20	.805	5.15
VI Inclination	.690		.960		.710		.845		.635		44.040	
VII Refraction	.710	1 17.1	47.010	1 10.5	.750	1 27.8	.875	1 36.2	.690	1 36.8	.070	1 19.8

	h Sagittarii		κ Aquilae	
	° ′ ″		° ′ ″	
CIRCLE READING.	295 56 4.30		313 46 6.35	
	r	′ ″	r	′ ″
I Microm. Eq.	46.620	5 17.91		5 41.66
II Red. to Mer.	.700	5.25		5.06
VI Inclination		1.61	47.875	−1.61
VII Refraction		1 54.1	.910	58.1

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ξ Serpentis	17 32 6.56	11	−0.11	−10.68	305 45 32.2	38.3
o Serpentis	17 36 2.61	11	−0.12	−10.73	308 16 22.8	38.2
Mayer 703	17 50 17.18	11	−0.10	−10.67	302 18 37.6	38.3
μ Sagittarii	18 8 2.25	11	−0.08	−10.73	300 0 36.4	37.8
π Sagittarii	19 4 4.36	11	−0.08	−10.67	299 54 51.0	37.9
υ Sagittarii	19 16 15.27	11	−0.11	−10.67	304 57 16.3	37.7
h Sagittarii	19 30 52.80	11	−0.06	−10.67	295 59 35.0	37.6
κ Aquilae	19 31 45.86	11	−0.14	−10.75	313 50 53.4	38.3

h 17.778 .... dt .... s −10.702

Hourly rate .... + 0.0077

Adopted Equator Point .... 321° 5′ 38.01″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 30	29.97	74.0	72.2
18 0	29.97	73.0	71.6
18 30	29.96	72.6	71.0
19 0	29.96	71.9	70.2
19 30	29.95	71.0	69.7

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.11	−4.31	−4.30	80.08	14	−0.11	−4.39	− 8.56	76.90	27	−0.10	−4.48	−11.89	80.71
2	0.11	4.31	5.38	76.47	15	0.11	4.42	9.72	77.29	28	0.11	4.44	12.28	76.31
3	0.10	4.36	5.30	80.39	16	0.11	4.43	9.82	77.72	29	0.11	4.45	12.36	77.12
4	0.10	4.37	5.40	81.34	17	0.11	4.43	10.01	77.45	30	0.10	4.49	12.56	81.25
5	0.10	4.38	5.85	81.63	18	0.10	4.46	9.94	80.73	31	0.10	4.49	12.68	80.87
6	0.10	4.39	6.51	80.43	19	0.11	4.42	10.25	76.43	32	0.10	4.50	12.70	81.69
7	0.10	4.39	6.52	80.43	20	0.11	4.46	10.38	80.38	33	0.11	4.48	12.96	79.66
8	0.10	4.42	6.46	83.61	21	0.11	4.45	10.69	78.43	34	0.11	4.47	13.06	77.94
9	0.10	4.42	6.47	83.73	22	0.11	4.45	11.04	78.80	35	0.10	4.49	13.07	80.61
10	0.11	4.39	6.91	80.18	23	0.10	4.47	11.24	80.47	36	0.10	4.50	13.15	81.23
11	0.11	4.39	7.01	79.95	24	0.11	4.45	11.58	77.93	37	0.11	4.45	13.58	76.31
12	0.11	4.41	7.91	79.85	25	0.11	4.46	11.78	78.23	38	−0.11	−4.46	−13.71	77.28
13	−0.11	−4.40	−8.07	78.66	26	−0.11	−4.46	−11.89	78.09					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. N. to 1900.0

1900 JULY 30. ZONE 217. CLAMP WEST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.1	10.1	12.3	14.3	16.6	18.8	c	4 14.42	306 8 10.0	0.5	III	46.830	18 3 59.64	−14 53 27.02	−14 4907
2	8.8	54.0	56.1	58.2	0.4	2.5	c	12 58.24	306 50 10.0	0.0	III	42.980	18 12 43.46	14 12 40.27	14 4984
3	9.0	30.9	32.9	34.9	36.6	38.9	a	14 4.70	304 58 10.0	0.7	I	48.210	18 13 49.87	16 3 2.86	16 4811
4	9.1	4.2	6.4	8.6	10.6	12.7	c	14 8.50	304 58 "	"	V	46.050	18 13 53.67	16 3 47.29	16 4812
5	8.8	46.5	48.7	50.8	53.0	55.0	c	16 50.80	304 58 "	"	III B	45.545	18 16 35.96	16 7 9.32	16 4840
6	9.0	44.5	46.5	48.5	50.3	52.7	a	23 18.29	305 24 10.0	0.2	I	47.415	18 23 3.44	15 37 18.23	15 4979
7	8.8	14.3	16.5	18.8	20.9	23.1	c	23 18.72	306 46 10.0	0.5	III	47.900	18 23 3.91	−14 15 6.72	−14 5069

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ' " "	r	h m s	° ' "	°
8	8.6	27.7	29.8	32.0	34.1	36.2	c	26 31.96	307 2 10.0 1.1	III B 40.655	18 26 17.16	−14 4 38.31	−14 5095
9	8.8	38.8	40.9	43.0	45.3	47.4	c	27 43.08	307 2 " "	III 47.795	18 27 28.28	13 59 8.22	14 5102
10	6.	6.8	8.9	11.0	13.2	15.3	c	28 11.04	306 6 10.0 1.3	V 46.290	18 27 56.21	−14 55 40.80	−14 5106
11	8.0	1.9	4.0	6.0	8.3	10.3	c	29 6.10	306 24 10.0 1.6	III 43.060	18 28 51.28	−14 38 40.65	−14 5113
12	8.5	13.6	15.6	17.4	19.2	21.5	a	30 47.02	307 12 10.0 29.6	I B 39.900	18 30 32.21	13 54 51.80	13 5046
13	8.7	47.9	50.0	52.2	54.3	56.4	c	30 52.16	307 12 " "	III A 38.430	18 30 37.36	13 48 52.84	13 5047
14	......	43.8	46.0	48.0	52.5	54.0	$c_3 d_2$	33 43.85	306 30 10.0 29.9	VI A 41.895	18 33 29.02	14 29 51.00	14 5143
15	8.3	23.5	25.6	27.8	30.0	32.0	c	35 27.78	306 30 " "	III B 43.225	18 35 12.95	14 35 52.18	14 5152
16	6.5	11.1	13.4	15.6	17.7	19.7	c	36 15.50	306 30 " "	III C 41.930	18 36 0.66	14 39 29.73	14 5156
17	9.3	15.2	17.5	19.6	21.8	23.9	c	42 19.60	306 58 10.0 1.5	III 42.470	18 42 4.78	14 4 51.85	14 5193
18	8.6	30.2	32.4	34.5	36.8	38.9	c	48 34.56	307 8 10.0 0.5	III 42.940	18 48 19.73	13 54 43.57	13 5138
19	8.4	13.0	15.2	17.3	19.5	21.6	c	49 17.32	306 34 10.0 0.4	III 45.590	18 49 2.47	14 27 54.34	14 5222
20	9.0	55.0	57.2	59.4	1.6	3.7	c	52 59.38	305 34 10.0 0.9	III 46.010	18 52 44.50	−15 27 48.98	−15 5159
21	8.9	41.6	43.8	46.0	48.1	50.3	c	53 45.96	305 34 " "	III C 43.395	18 53 31.07	−15 35 5.50	−15 5164
22	8.3	11.1	13.3	15.5	17.8	19.8	c	54 15.50	305 34 " "	V 48.740	18 54 0.62	15 26 57.72	15 5166
23	8.9	25 7	28.0	30.0	32.3	34.4	c	55 30.08	305 34 " "	III B 47.660	18 55 15.19	15 30 30.89	15 5178
24	6.0	1.1	3.2	5.4	7.7	9.7	c	56 5.42	305 34 " "	III A 43.350	18 55 50.54	15 25 25.26	15 5185
25	7.9	24.4	26.4	28.6	30.8	32.9	c	6 28.62	306 22 10.0 1.1	III B 39.830	19 6 13.75	14 44 59.54	14 5317
26	9.2	21.7	23.7	26.0	28.0	30.1	c	7 25.90	306 22 " "	III C 46.870	19 7 11.03	14 45 57.86	14 5325
27	9.1	11.5	13.7	15.7	17.9	20.2	c	9 15.80	306 22 " "	III A 46.200	19 9 0.93	14 36 29.64	14 5344
28	9.1	3.3	5.5	7.6	9.7	11.9	c	10 7.60	306 8 10.0 1.5	III 48.260	19 9 52.72	14 53 5.45	14 5351
29	8.0	4.0	6.2	8.3	10.5	12.6	c	14 8.32	306 42 10.0 1.8	III 44.770	19 13 53.46	14 20 11.43	14 5387
30	8.6	31.1	33.3	35.4	37.6	39.7	c	14 35.42	306 16 10.0 1.4	V 46.330	19 14 20.55	−14 45 44.07	−14 5390
31	8.0	22.6	24.7	26.8	29.2	31.2	c	19 26.90	305 48 10.0 1.5	III 48.010	19 19 12.01	−15 13 12.04	−15 5341
32	9.0	19.8	21.9	24.2	26.3	28.4	c	21 24.12	305 16 10.0 0.6	III 48.650	19 21 9.23	15 45 1.76	15 5352
33	9.2	57.3	59.6	1.8	4.0	6.2	c	25 1.78	307 2 10.0 0.4	III 44.760	19 24 46.92	14 0 12.50	14 5448
34	9.1	24.6	26.7	28.8	31.0	33.1	c	28 28.84	306 50 10.0 1.5	III 43.530	19 28 13.98	14 12 36.31	14 5464
35	9.0	24.0	26.3	28.4	30.5	32.7	c	29 28.38	306 12 10.0 1.3	III 46.150	19 29 13.50	14 49 47.87	14 5466
36	9.0	30.5	32.6	34.8	37.0	39.1	c	31 34.80	305 54 10.0 1.0	III 47.965	19 31 19.92	15 7 14.00	15 5407
37	6.	1.9	4.0	6.2	8.4	10.6	c	38 6.22	305 20 10.0 0.8	III 45.320	19 37 51.32	15 42 7.22	15 5444
38	9.3	52.6	54.7	56.9	59.1	1.1	c	38 56.88	305 48 10.0 0.8	III 44.630	19 38 41.99	15 14 19.27	15 5448
39	9.1	7.6	9.8	12.0	14.0	16.3	c	40 11.94	306 20 10.0 1.5	III 44.440	19 39 57.06	14 42 21.24	14 5534
40	8.8	33.6	35.6	37.7	39.9	42.0	c	42 37.76	306 20 " "	III C 44.350	19 42 22.89	−14 48 49.46	−14 5552
41	9.1	58.6	0.9	3.0	5.2	7.4	c	46 3.02	305 10 10.0 0.7	III 45.715	19 45 48.13	−15 52 0.88	−15 5483
42	9.0	14.2	16.4	18.4	20.6	22.7	c	47 18.46	305 22 10.0 0.8	III 44.630	19 47 3.57	15 40 21.21	15 5492
43	8.8	36.7	38.8	41.0	43.1	45.3	c	47 40.98	305 44 10.0 2.1	V 46.070	19 47 26.10	15 17 53.19	15 5495
44	9.0	7.4	9.3	11.5	13.7	15.8	c	50 11.54	307 12 10.0 0.7	III 46.920	19 49 56.70	13 49 32.59	13 5518
45	9.3	1.2	3.3	5.0	7.0	9.4	a	0 34.79	306 48 10.0 1.3	I 42.740	20 0 19.95	14 14 52.95	14 5636
46	8.7	56.5	58.7	0.8	3.0	5.1	c	1 0.82	305 46 10.0 1.2	III A 49.090	20 0 45.95	15 11 40.11	15 5557
47	8.9	32.6	34.8	37.0	39.2	41.3	c	1 36.98	305 46 " "	V C 46.330	20 1 22.11	15 22 15.61	15 5558
48	9.1	56.6	58.8	0.9	5.1	6.8	$c_3 d_2$	5 56.63	306 28 10.0 1.6	V 46.280	20 5 41.78	14 33 49.01	14 5663
49	8.0	18.4	20.6	22.7	24.9	27.0	c	11 22.72	305 32 10.0 0.3	III 47.980	20 11 7.85	15 29 18.61	15 5606
50	8.6	25.6	27.8	29.9	32.0	34.4	c	14 29.94	305 42 10.0 0.7	V 46.560	20 14 15.09	−15 19 46.86	−15 5619

Reduction Elements. Zone 217.

	OBSERVED.			ADOPTED.		
1900.	c	b	a	c	b	a
	s	s	s	s	s	s
July 30.4....	+0.130	−0.384	−0.055	+0.123	−0.368	+0.011
30.5....	+0.116	−0.351	+0.077			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		Mayer 703		ν Ophiuchi		μ Sagittarii		Bradley 2333		63 Sagittarii		Lalande 38458	
		° ' "		° ' "		° ' "		° ' "		° ' "		° ' "	
	CIRCLE READING.	302 14 4.60		311 16 5.15		299 58 4.45		297 28 4.75		307 8 5.55		313 58 6.35	
		r	' "	r	' "	r	' "	r	' "	r	' "	r	' "
I	Microm. Eq......	48.470	5 54.60	45.345	4 54.82	42.620	4 2.06	42.280	3 56.29	42.760	4 5.27		5 39.59
II	Red. to Mer......	.465	5.18	.400	5.09	.645	5.20	.330	5.24	.780	5.13	47.665	5.06
VI	Inclination	.660		.550		.750		.485		.935		.830	−0.64
VII	Refraction	.655	1 26.9	.545	1 2.6	.795	1 35.2	.500	1 45.5	43.010	1 12.8	.860	57.2

		α^2 Capricorni		β Capricorni	
		° ' "		° ' "	
	CIRCLE READING.	308 10 5.25		305 56 5.10	
		r	' "	r	' "
I	Microm. Eq.	47.560	5 37.99		5 13.67
II	Red. to Mer......	.620	5.12		5.14
VI	Inclination	.790		46.430	−1.61
VII	Refraction	.840	1 10.1	.450	1 16.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Mayer 703	17 50 16.82	11	−0.07	−10.37	302 18 37.5	38.2
ν Ophiuchi	17 53 45.87	11	−0.11	−10.41	311 20 2.5	37.6
μ Sagittarii	18 8 1.95	11	−0.06	−10.46	300 0 36.5	37.9
Bradley 2333	18 32 40.78	11	−0.04	−10.35	297 30 20.8	38.9
63 Sagittarii	19 56 37.32	11	−0.09	−10.31	307 11 3.2	38.1
Lalande 38458	20 3 1.05	11	−0.13	−10.31	314 2 53.2	38.1
α^2 Capricorni	20 12 45.23	11	−0.10	−10.33	308 14 38.3	38.2
β Capricorni	20 15 38.43	11	−0.09	−10.32	306 0 6.3	38.4

h 18.102 .... *dt* .... s −10.398
Hourly rate .... + 0.0397
Adopted Equator Point .... 321° 5′ 38.″18

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 49	29.82	75.6	74.9
18 0	29.82	75.4	74.5
19 0	29.82	74.2	73.3
19 30	29.82	73.9	73.1
20 17	29.83	73.2	72.7

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.09	−4.29	−5.70	75.22	18	−0.09	−4.37	−10.18	72.72	35	−0.09	−4.45	−13.86	75.23
2	0.09	4.30	6.69	73.42	19	0.09	4.39	10.17	74.18	36	0.09	4.45	14.03	76.02
3	0.08	4.36	6.44	78.52	20	0.09	4.42	10.37	76.93	37	0.09	4.47	14.55	77.68
4	0.08	4.36	6.45	78.55	21	0.09	4.43	10.43	77.29	38	0.09	4.46	14.68	76.37
5	0.08	4.37	6.55	78.72	22	0.09	4.42	10.50	76.90	39	0.09	4.45	14.83	74.90
6	0.09	4.37	7.44	77.30	23	0.09	4.43	10.60	77.07	40	0.09	4.45	15.04	75.21
7	0.09	4.33	7.70	73.56	24	0.09	4.43	10.68	76.83	41	0.08	4.48	15.27	78.17
8	0.09	4.33	8.04	73.11	25	0.09	4.42	11.75	74.98	42	0.09	4.47	15.38	77.61
9	0.09	4.33	8.17	72.86	26	0.09	4.42	11.84	75.03	43	0.09	4.46	15.45	76.55
10	0.09	4.36	8.05	75.39	27	0.09	4.42	12.03	74.59	44	0.09	4.42	15.76	72.57
11	0.09	4.35	8.18	74.62	28	0.09	4.43	12.09	75.35	45	0.09	4.43	16.62	73.71
12	0.09	4.34	8.48	72.69	29	0.09	4.42	12.52	73.88	46	0.09	4.46	16.61	76.28
13	0.09	4.33	8.51	72.42	30	0.09	4.43	12.51	75.01	47	0.09	4.46	16.64	76.78
14	0.09	4.36	8.67	74.23	31	0.09	4.45	12.90	76.30	48	0.09	4.44	17.05	74.56
15	0.09	4.36	8.81	74.50	32	0.08	4.46	13.03	77.80	49	0.09	4.46	17.46	77.14
16	0.09	4.37	8.88	74.66	33	0.09	4.42	13.56	73.01	50	−0.09	−4.45	−17.71	76.68
17	−0.09	−4.36	−9.57	73.15	34	−0.09	−4.43	−13.84	73.55					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. N. to 1900.0

1900 OCTOBER 9. ZONE 218. CLAMP WEST.

KING, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	7.5	3.7	5.7	8.0	10.2	12.4	c	39 8.00	303 26 10.0	6.1	III B	48.945	19 38 45.24	−17 38 19.86	−17 5732
2	9.1	46.9	49.1	51.2	53.5	55.7	c	39 51.28	303 26 "	"	III C	42.115	19 39 28.52	17 43 44.21	17 5736
3	8.7	33.2	35.5	37.6	39.9	42.1	c	42 37.66	303 26 "	"	III C	42.720	19 42 14.88	17 43 32.85	17 5750
4	9.2	7.1	9.2	11.1	12.9	15.3	a	46 41.22	303 26 "	"	I A	46.470	19 46 18.43	[17 32 38.23]	17 5771
5	9.0	39.4	41.5	43.7	46.1	48.4	c	46 43.82	303 26 "	"	III B	46.535	19 46 21.03	17 39 6.76	17 5773
6	7.8	49.0	51.1	53.2	55.6	57.7	c	52 53.32	304 52 10.0	6.5	III B	42.875	19 52 30.54	16 14 13.30	16 5469
7	7.0	38.1	40.2	42.2	43.8	46.3	a	55 12.00	304 52 "	"	I	47.250	19 54 49.21	16 9 34.86	16 5478
8	8.9	48.9	51.1	53.2	55.5	57.7	c	55 53.28	304 12 10.0	8.0	III	44.750	19 55 30.48	16 50 25.47	16 5481
9	8.8	25.7	27.9	30.1	32.2	34.5	c	57 30.08	304 42 10.0	7.4	III	44.280	19 57 7.28	16 20 33.56	16 5487
10	9.1	8.1	10.3	12.6	14.8	16.8	c	59 12.52	304 16 10.0	7.2	III	47.100	19 58 49.71	−16 45 40.85	−16 5494
11	8.7	10.9	13.1	15.3	17.5	19.8	c	0 15.32	303 2 10.0	6.3	III	49.305	19 59 52.48	−17 59 2.63	−18 5590
12	8.6	3.6	5.7	8.0	10.2	12.4	c	2 7.98	303 46 10.0	7.0	III	49.485	20 1 45.15	17 14 56.80	17 5861
13	9.2	57.5	59.6	1.9	4.1	6.2	c	6 1.86	305 14 10.0	7.0	III	47.485	20 5 39.04	15 47 31.49	15 5576
14	9.3	56.8	59.2	1.3	3.3	5.6	c	8 1.24	303 50 10.0	7.3	III	45.935	20 7 38.39	17 12 5.06	17 5903
15	9.1	0.5	2.9	5.1	7.4	9.3	c	13 5.04	303 10 10.0	8.0	III	44.640	20 12 42.16	17 52 31.90	18 5644
16	8.8	21.7	23.9	26.0	28.3	30.4	c	16 26.06	304 26 10.0	7.5	III	46.990	20 16 3.20	16 35 43.65	16 5570
17	7.7	53.0	55.1	57.3	59.5	1.5	c	16 57.28	305 6 10.0	7.0	III	44.235	20 16 34.43	15 56 35.04	16 5575
18	9.1	1.6	3.7	6.0	8.3	10.3	c	20 5.98	303 24 10.0	6.1	III	43.955	20 19 43.08	17 38 45.83	17 5972
19	8.2	...	10.2	12.0	13.8	16.2	a	21 41.95	304 48 10.0	7.4	I	45.435	20 21 19.08	16 14 11.46	16 5604
20	8.6	45.0	47.2	49.4	51.6	53.9	c	21 49.42	303 36 10.0	7.5	III	47.395	20 21 26.52	−17 25 38.66	−17 5979
21	9.5	47.3	49.4	...	53.9	56.1	c	24 51.67	304 26 10.0	7.8	III A	42.040	20 24 28.78	−16 34 4.17	−16 5613
22	9.3	6.6	8.7	10.8	13.0	15.3	c	25 10.88	304 26 "	"	V	44.900	20 24 47.98	−16 36 25.60	−16 5615

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
23	8.8	45.0	47.3	49.5	51.8	53.9	c	27 49.50	304 40 10.0	6.8	III	46.320	20 27 26.61	—16 21 57.09	—16 5632
24	8.8	5.1	7.2	9.5	11.6	13.9	c	29 9.46	305 12 10.0	7.2	III	45.960	20 28 46.58	15 50 2.46	15 5716
25	8.4	21.5	23.8	25.9	28.1	30.3	c	33 25.92	303 38 10.0	7.5	III	43.600	20 33 2.99	17 24 52.24	17 6045
26	6.0	13.9	16.1	18.3	20.5	22.7	c	35 18.30	304 34 10.0	7.6	III	43.660	20 34 55.39	16 28 48.56	16 5663
27	9.2	23.6	25.8	27.9	30.0	32.3	c	37 27.92	304 20 10.0	8.1	III	44.855	20 37 4.99	16 42 26.18	16 5674
28	9.0	34.6	36.8	38.9	41.2	43.1	c	39 38.92	304 20 "	"	III	43.910	20 39 15.99	16 42 44.46	16 5686
29	8.5	10.0	12.2	14.3	16.5	18.7	c	42 14.34	305 8 9.6	6.0	III C	51.055	20 41 51.41	15 58 52.97	16 5695
30	8.0	18.8	21.0	23.0	25.3	27.4	c	45 23.10	305 8 "	"	III	49.380	20 45 0.17	—15 52 59.00	—16 5709
31	9.0	......	53.0	55.2	57.4	59.6	c	45 55.22	305 24 10.0	7.4	III	45.670	20 45 32.25	—15 38 7.97	—15 5814
32	9.2	6.9	8.9	11.1	13.3	15.5	c	50 11.14	304 36 10.0	7.5	III	47.250	20 49 48.18	16 25 40.71	16 5728
33	9.3	53.3	55.5	57.7	59.9	2.1	c	51 57.70	304 56 10.0	7.6	III	46.240	20 51 34.74	16 5 59.26	16 5738
34	8.3	9.1	11.2	13.4	15.7	17.8	c	54 13.44	303 46 10.0	7.9	III	46.270	20 53 50.46	17 16 1.94	17 6140
35	8.8	40.6	42.7	44.9	47.1	49.2	c	54 44.90	303 22 10.0	7.7	V	44.465	20 54 21.91	17 40 39.21	17 6144
36	8.1	53.6	55.7	57.9	0.1	2.3	c	1 57.92	304 40 10.0	7.0	III	44.975	21 1 34.93	16 22 25.26	16 5797
37	9.4	39.3	41.4	43.6	45.8	48.1	c	4 43.64	303 22 10.0	7.5	III	46.710	21 4 20.63	17 39 55.60	17 6195
38	9.5	57.0	59.1	1.4	3.7	5.6	c	6 1.36	305 8 10.0	7.7	III	45.830	21 5 38.37	15 54 7.49	16 5814
39	7.0	58.6	1.0	3.1	5.4	7.5	c	13 3.12	303 10 10.0	7.3	III	43.735	21 12 40.08	17 52 53.95	18 5904
40	9.5	49.7	51.8	53.9	56.2	58.4	c	22 54.00	304 22 10.0	7.6	III	44.100	21 22 30.96	—16 40 43.92	—16 5866
41	8.5	27.3	29.6	31.8	34.1	36.2	c	29 31.80	304 2 10.0	7.3	III	52.530	21 29 8.74	—16 58 3.63	—17 6314
42	8.2	32.2	34.2	36.4	38.7	41.0	c	30 36.50	304 2 "	"	III C	47.635	21 30 13.43	17 6 3.99	17 6318
43	8.6	36.4	38.4	40.8	42.9	45.2	c	32 40.74	304 20 10.0	7.5	III	46.160	21 32 17.68	—16 42 5.11	—16 5901

Reduction Elements. Zone 218.

	OBSERVED.			ADOPTED.		
1900.	c	b	a	c	b	a
	s	s	s	s	s	s
October 9.3...	+0.010	—0.288	—0.078	—0.005	—0.294	—0.061
9.4...	—0.020	—0.299	—0.044			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	d Sagittarii		*υ* Sagittarii		*h* Sagittarii		*κ* Aquilae		*ζ* Capricorni		*β* Aquarii	
	° ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	301 54 8.35		304 54 8.00		295 56 7.45		313 46 8.65		298 12 8.05		315 0 8.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	46.685	5 21.62	44.050	4 31.02	46.700	5 20.81		5 47.98	45.325	4 56.04	49.275	6 11.48
II Red. to Mer......	.715	5.18	.075	5.15	.755	5.25		5.06	.340	5.23	.290	5.06
VI Inclination	.830		.190			1.64	48.140	—1.64	.570		.445	
VII Refraction	.850	1 31.7	.215	1 21.9		1 57.2	.150	59.7	.510	1 46.7	.470	57.4

	γ Capricorni		*λ* Capricorni	
	° ′ ″		° ′ ″	
CIRCLE READING.	303 56 9.55		309 12 9.35	
	r	′ ″	r	′ ″
I Microm. Eq......	43.715	4 25.58	46.865	5 25.48
II Red. to Mer......	.815	5.16	.920	5.11
VI Inclination	.955		47.030	
VII Refraction	.905	1 25.2	.070	1 10.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
d Sagittarii..........	19 12 9.78	11	—0.22	—18.77	301 58 3.5	43.8
υ Sagittarii..........	19 16 22.75	11	—0.23	—18.84	304 57 22.3	43.7
h Sagittarii..........	19 31 0.24	11	—0.21	—18.72	295 59 38.0	43.2
κ Aquilae	19 31 53.11	11	—0.25	—18.60	313 51 0.3	43.0
ζ Capricorni.........	21 21 20.61	11	—0.21	—18.56	298 15 22.6	43.4
β Aquarii	21 26 40.65	11	—0.26	—18.65	315 5 27.9	43.0
γ Capricorni.........	21 34 56.13	11	—0.23	—18.56	303 59 15.1	43.4
λ Capricorni.........	21 41 32.21	11	—0.24	—18.61	309 16 29.6	43.5

19.380 h .... *dt* .... —18.732 s
Hourly rate............ + 0.0641

Adopted Equator Point......... 321° 5′ 43.38″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 17	29.96	58.8	56.7
20 3	29.955	57.0	55.7
20 30	29.95	57.0	55.8
20 56	29.95	56.8	55.2
21 36	29.95	56.0	54.9

Note.

39. Image very unsteady and diffuse.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	—0.23	—3.82	—13.82	86.72	16	—0.23	—3.96	—17.11	83.45	31	—0.23	—4.10	—18.90	80.59
2	0.23	3.82	13.84	87.02	17	0.23	3.95	17.37	81.47	32	0.23	4.09	19.60	82.99
3	0.23	3.84	14.07	87.02	18	0.23	4.00	17.03	86.80	33	0.23	4.09	19.82	82.00
4	0.23	3.85	14.47	86.44	19	0.23	3.97	17.63	82.35	34	0.23	4.12	19.60	85.64
5	0.23	3.85	14.44	86.79	20	0.23	4.00	17.23	86.09	35	0.23	4.13	19.50	86.97
6	0.23	3.85	15.41	82.35	21	0.23	3.99	17.75	83.35	36	0.23	4.13	20.40	82.85
7	0.23	3.86	15.63	82.11	22	0.23	4.00	17.77	83.47	37	0.23	4.16	20.16	86.96
8	0.23	3.87	15.45	84.21	23	0.23	4.00	18.03	82.74	38	0.23	4.14	20.81	81.43
9	0.23	3.87	15.75	82.68	24	0.23	3.99	18.31	81.13	39	0.23	4.20	20.64	87.69
10	0.23	3.89	15.73	83.97	25	0.23	4.04	18.08	86.05	40	0.23	4.21	21.63	83.82
11	0.23	3.92	15.39	87.93	26	0.23	4.03	18.54	83.10	41	0.23	4.23	21.93	84.74
12	0.23	3.91	15.78	85.52	27	0.23	4.05	18.62	83.80	42	0.23	4.24	21.95	85.15
13	0.23	3.90	16.59	81.03	28	0.23	4.05	18.76	83.83	43	—0.23	—4.24	—22.19	83.90
14	0.23	3.94	16.26	85.36	29	0.23	4.05	19.19	81.61					
15	—0.23	—3.97	—16.41	87.57	30	—0.23	—4.06	—19.44	81.33					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. N. to 1900.0

1900 OCTOBER 10. ŻONE 219. CLAMP WEST.

KING, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
1	9.5	50.6	52.8	54.9	57.0	59.1	c	17 54.88	305 28 10.0 8.0	III 45.445	20 17 31.64	—15 34 11.04	—15 5641
2	9.3	22.1	24.2	26.4	28.7	30.7	c	21 26.42	305 28 “ “	III C 50.160	20 21 3.16	15 39 7.17	15 5669
3	8.9	30.9	33.1	35.2	37.5	39.5	c	27 35.24	307 4 10.6 8.2	III C 50.930	20 27 11.98	14 2 48.46	14 5775
4	8.9	15.0	17.2	19.4	21.6	25.7	c	28 19.38	307 4 “ “	III A 49.820	20 27 56.12	13 53 28.52	14 5780
5	6.5	56.5	58.8	1.0	3.3	5.2	c	29 0.96	307 4 “ “	V C 47.655	20 28 37.69	14 3 52.49	14 5781
6	9.4	23.6	25.6	27.8	30.0	32.1	c	34 27.82	307 4 “ “	III C 46.880	20 34 4.53	14 4 6.68	14 5810
7	9.2	31.3	33.6	35.7	37.9	40.0	c	35 35.70	305 42 10.5 8.5	III A 47.560	20 35 12.38	15 16 15.74	15 5754
8	9.1	41.1	43.3	45.4	47.7	49.8	c	38 45.46	305 42 “ “	III 45.060	20 38 22.12	15 20 18.90	15 5769
9	7.8	6.7	9.1	11.2	13.5	15.7	c	40 11.24	305 42 “ “	III B 44.005	20 39 47.90	15 23 52.41	15 5780
10	9.1	46.8	48.9	51.0	53.2	55.3	c	45 51.04	305 36 10.0 7.9	III 43.745	20 45 27.67	—15 26 45.47	—15 5813
11	9.0	11.7	14.0	16.1	18.3	20.5	c	2 16.12	306 38 10.0 8.2	III 44.120	21 1 52.70	—14 24 36.64	—14 5937
12	9.1	0.1	2.1	4.0	6.0	8.2	a	9 33.82	305 50 10.0 8.3	I 44.290	21 9 10.36	15 12 34.31	15 5926
13	8.7	39.0	41.1	43.2	45.5	47.6	c	9 43.28	305 50 “ “	III 45.180	21 9 19.82	15 12 18.73	15 5928
14	9.2	48.7	50.6	52.4	54.3	56.5	a	12 22.13	306 36 10.3 9.0	I 47.730	21 11 58.67	14 25 26.04	14 5984
15	8.8	23.2	25.4	27.5	29.8	31.8	c	12 27.54	307 12 9.2 6.6	III 45.500	21 12 4.09	13 50 10.60	14 5987
16	8.8	48.6	50.7	53.0	55.1	57.2	c	19 52.92	306 14 10.0 7.6	III 47.530	21 19 29.43	14 47 33.62	14 6018
17	8.9	25.0	27.2	29.3	31.5	33.6	c	20 29.32	306 38 10.0 8.3	III 48.780	21 20 5.84	14 23 8.29	14 6022
18	7.0	30.7	33.0	35.1	37.3	39.3	c	24 35.08	306 32 10.5 9.4	III A 43.030	21 24 11.58	14 27 43.41	14 6039
19	9.0	24.8	27.1	29.2	31.4	33.6	c	25 29.22	306 32 “ “	V C 48.015	21 25 5.72	14 35 50.14	14 6045
20	8.8	58.6	......	2.4	4.3	6.6	a	25 32.15	306 32 “ “	I C 45.455	21 25 8.65	—14 36 36.94	—14 6046
21	9.4	3.7	5.9	8.1	10.3	12.4	c	30 8.08	306 0 10.0 8.5	III 44.160	21 29 44.54	—15 2 39.06	—15 6014
22	8.9	16.2	18.4	20.5	22.7	24.8	c	31 20.52	306 42 10.0 8.1	III C 48.960	21 30 56.99	14 25 31.76	14 6078
23	8.8	54.9	57.1	59.3	1.5	3.7	c	31 59.30	306 42 “ “	V A 43.615	21 31 35.77	14 17 34.55	14 6081
24	5.8	52.6	54.9	57.1	59.2	1.3	c	38 57.02	305 50 10.0 8.0	III 44.840	21 38 33.45	15 12 27.23	15 6052
25	9.0	34.8	37.1	39.3	41.5	43.5	c	48 39.24	305 28 10.0 7.3	III 46.620	21 48 15.64	15 33 54.90	15 6087
26	9.5	44.1	46.3	48.6	50.9	52.9	c	50 48.56	306 24 10.0 7.7	III 45.920	21 50 24.97	14 38 5.81	14 6160
27	9.0	3.6	5.7	7.9	10.1	12.2	c	56 7.90	306 22 10.0 7.9	III 45.630	21 55 44.29	14 40 11.65	14 6190
28	8.0	16.9	19.1	21.3	23.4	25.7	c	58 21.28	305 36 10.0 8.2	III 46.120	21 57 57.64	—15 26 4.22	—15 6129

Reduction Elements. Zone 219.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 10.3....	—0.016	—0.245	—0.103	—0.018	—0.180	—0.110
10.4....	—0.020	—0.114	—0.118			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	63 Sagittarii		α^2 Capricorni		β Capricorni		ρ Capricorni		γ Capricorni		λ Capricorni	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	307 8 8.70		308 10 8.95		305 56 8.85		302 54 8.60		303 56 9.25		309 12 9.00	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	42.990	4 10.58	47.820	5 43.06	46.420	5 16.23	44.265	4 35.48	43.780	4 26.15	46.990	5 27.25
II Red. to Mer......	43.010	5.13	.840	5.12	.430	5.14	.320	5.17	.805	5.16	47.015	5.11
VI Inclination	.115		.925		.550		.415		.950		.110	
VII Refraction	.150	1 15.7	.965	1 12.9	.555	1 19.1	.455	1 28.6	.975	1 25.5	.140	1 10.6

	Mayer 909		ι Aquarii	
	° ′ ″		° ′ ″	
CIRCLE READING.	299 22 8.45		306 40 9.00	
	r	′ ″	r	′ ″
I Microm. Eq......	48.560	5 58.02	48.375	5 54.50
II Red. to Mer......	.610	5.21	.405	5.13
VI Inclination	.755		.575	
VII Refraction	.745	1 42.0	.585	1 17.3

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
63 Sagittarii	19 56 45.64	11	—0.22	—19.13	307 11 8.7	43.4
α^2 Capricorni	20 12 53.56	11	—0.22	—19.09	308 14 44.2	43.7
β Capricorni	20 15 46.79	11	—0.22	—19.08	306 0 11.1	43.6
ρ Capricorni	20 23 32.76	11	—0.22	—19.10	302 57 20.6	42.8
γ Capricorni	21 34 56.65	11	—0.22	—19.11	303 59 15.1	43.5
λ Capricorni	21 41 32.67	11	—0.22	—19.10	309 16 30.8	44.7
Mayer 909	21 53 32.93	11	—0.22	—19.15	299 26 29.7	44.6
ι Aquarii	22 1 25.87	11	—0.22	—19.17	306 44 51.3	44.6

h 20.202 .... *dt* .... s —19.100

Hourly rate .... — 0.0201

Adopted Equator Point........ 321° 5′ 43.″86

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
19 55	29.92	57.0	55.1
20 30	29.92	55.4	54.0
20 57	29.92	54.6	53.7
21 27	29.92	53.9	53.0
21 59	29.91	53.5	52.2

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″
1	—0.22	-3.92	—17.59	80.48	15	—0.22	—4.11	—21.85	75.74
2	0.22	3.94	17.82	80.75	16	0.22	4.15	22.01	78.42
3	0.22	3.93	18.82	76.20	17	0.22	4.14	22.17	77.26
4	0.22	3.93	18.91	75.77	18	0.22	4.16	22.38	77.50
5	0.22	3.94	18.91	76.26	19	0.22	4.16	22.39	77.88
6	0.22	3.96	19.29	76.28	20	0.22	4.16	22.39	77.91
7	0.22	3.99	18.97	79.68	21	0.22	4.19	22.52	79.17
8	0.22	4.01	19.17	79.88	22	0.22	4.18	22.78	77.41
9	0.22	4.01	19.25	80.07	23	0.22	4.18	22.86	77.06
10	0.22	4.04	19.62	80.22	24	0.22	4.22	22.97	79.68
11	0.22	4.08	21.05	77.30	25	0.22	4.25	23.37	80.75
12	0.22	4.12	21.25	79.58	26	0.22	4.24	23.75	78.06
13	0.22	4.12	21.26	79.57	27	0.22	4.26	23.99	78.18
14	—0.22	—4.12	—21.67	77.36	28	—0.22	—4.28	—23.89	80.40

a = Instrumental corrections.
A = *α* to 1900.0
D = Z. D. N. to 1900.0

1900 OCTOBER 24. ZONE 220. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.9	54.3	56.5	58.6	0.8	2.9	c	2 58.62	306 38 10.0	5.4	III	45.020	21 2 29.53	—14 24 17.78	—14 5939
2	9.1	6.6	8.9	11.0	13.2	15.4	c	45 11.02	303 16 10.0	5.6	III	44.235	21 44 41.68	17 46 44.12	17 6388
3	9.4	33.2	35.4	37.5	39.7	41.8	c	50 37.52	305 4 10.7	6.4	III	43.130	21 50 8.17	15 58 59.89	16 5971
4	8.8	10.3	12.6	14.8	16.9	19.0	c	55 14.72	304 10 10.2	6.3	VI	45.320	21 54 45.34	16 52 22.71	17 6416
5	10.0	17.3	21.8	24.0	30.5	32.0	c_1 d_2	58 21.78	303 56 10.5	7.0	VI	44.710	21 57 52.37	17 6 34.71	17 6424
6	8.1	57.8	59.9	2.0	4.2	6.3	c	1 2.04	304 32 10.0	6.0	III	49.390	22 0 32.61	16 29 2.24	16 6019
7	8.2	21.9	23.9	25.8	27.7	30.0	a	2 55.79	304 32 "	"	I	48.120	22 2 26.38	16 29 25.19	16 6027
8	8.5	0.9	2.9	7.0	8.6	11.4	c_4 d_8	2 58.61	306 58 10.0	6.5	VI	45.280	22 [illegible] 29.23	14 4 16.68	14 6214
9	8.5	11.7	14.0	16.0	18.0	20.2	c	12 15.98	306 20 10.0	6.3	III	47.770	22 11 46.55	14 41 28.94	14 6245
10	9.2	10.9	12.9	15.2	17.3	19.5	c	17 15.16	305 40 10.0	6.3	III	45.590	22 16 45.69	—15 22 12.76	—15 6202

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
11	9.2	32.4	34.5	36.8	38.9	41.0	c	19 36.72	307 20 10.0	6.0	III	45.730	22 19 7.26	−13 42 6.22	−13 6177
12	9.3	47.6	49.7	52.0	54.2	56.3	c	19 51.96	307 20 "	"	V	42.180	22 19 22.50	13 43 15.67	13 6179
13	......	14.4	16.4	18.4	20.3	22.6	a	23 48.37	304 20 10.0	6.5	I	47.515	22 23 18.86	16 41 38.04	16 6090
14	9.3	36.6	38.8	40.9	43.2	45.3	c	27 40.96	305 36 10.0	6.2	III	46.660	22 27 11.45	15 25 52.88	15 6240
15	9.3	31.4	33.8	36.0	38.1	42.4	c_2 d_1	30 33.74	303 16 10.0	6.4	VI	45.270	22 30 4.21	17 46 27.90	18 6151
16	9.1	0.9	......	4.9	7.2	9.3	c	33 5.04	307 18 10.0	6.6	III	49.470	22 32 35.52	13 42 54.73	13 6230
17	7.6	42.0	44.1	46.5	48.5	52.9	c_2 d_1	33 44.24	306 26 10.0	6.6	V	48.690	22 33 14.71	14 35 13.15	14 6320
18	9.2	14.5	16.6	18.6	20.9	23.0	c	35 18.72	305 14 10.0	6.8	III	48.310	22 34 49.17	15 47 22.16	16 6127
19	8.9	36.4	38.5	40.7	42.9	45.0	c	38 40.70	304 22 10.0	6.5	III	47.545	22 38 11.13	16 39 39.45	16 6142
20	8.8	5.2	7.4	9.5	11.7	13.7	c	40 9.50	306 52 10.0	6.5	III	46.900	22 39 39.94	−14 9 45.39	−14 6337

Reduction Elements. Zone 220.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 24.2....	−0.014	−0.289	−0.060	−0.014	−0.264	−0.043
24.3....	−0.014	−0.258	−0.027			
24.5....	−0.013	−0.245	−0.042			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		ε Aquarii		19 Capricorni		ν Aquarii		ζ Capricorni		σ Aquarii		υ Aquarii	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		311 10 7.75		302 44 7.25		309 16 8.70		298 12 7.90		309 50 8.25		299 50 7.70	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	46.175	5 12.40	45.960	5 8.02	43.615	4 23.98	45.210	4 53.54	47.570	5 39.36	43.250	4 14.88
II	Red. to Mer......	.220	5.09	46.000	5.17	.705	5.11	.230	5.23	.620	5.10	.330	5.20
VI	Inclination	.370		.125		.860		.390		.810			1.64
VII	Refraction.......	.390	1 4.2	.160	1 27.2	.880	1 8.8	.395	1 44.7	.780	1 7.7		1 38.3

		τ Aquarii		λ Aquarii	
		° ′ ″		° ′ ″	
CIRCLE READING.		306 54 9.00		312 54 8.90	
		r	′ ″	r	′ ″
I	Microm. Eq......	48.430	5 56.06	49.420	6 14.36
II	Red. to Mer......	.505	5.13	.470	5.07
VI	Inclination	.690		.580	
VII	Refraction.......	.640	1 15.2	.610	1 0.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ε Aquarii...........	20 42 44.67	11	−0.22	−24.99	311 14 21.0	43.2
19 Capricorni........	20 49 37.89	11	−0.20	−24.97	302 47 53.2	43.1
ν Aquarii...........	21 4 37.84	11	−0.22	−24.93	309 19 29.0	43.5
ζ Capricorni........	21 21 26.95	11	−0.19	−25.16	298 15 22.0	43.9
σ Aquarii...........	22 25 50.83	10	−0.22	−25.13	309 54 45.0	42.8
υ Aquarii...........	22 29 43.02	11	−0.20	−25.08	299 52 51.1	42.7
τ Aquarii...........	22 44 47.47	11	−0.21	−25.18	306 58 55.0	43.6
λ Aquarii...........	22 47 53.38	11	−0.23	−25.10	312 59 27.5	42.9

h 20.995	*dt*	s −25.012	
	Hourly rate	− 0.0677	
	Adopted Equator Point	° ′ ″ 321 5 43.21	

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
20 38	30.14	70.0	69.2
21 17	30.15	68.9	68.0
22 21	30.16	67.2	66.2
22 46	30.17	67.0	65.9

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.21	−3.86	−20.43	75.58	8	−0.21	−4.09	−23.58	74.95	15	−0.20	−4.22	−23.50	86.04
2	0.20	4.08	21.57	85.83	9	0.21	4.13	23.67	76.68	16	0.21	4.19	24.80	74.10
3	0.21	4.07	22.42	80.30	10	0.21	4.16	23.74	78.62	17	0.21	4.20	24.57	76.47
4	0.21	4.10	22.34	83.01	11	0.21	4.15	24.35	74.01	18	0.21	4.22	24.26	79.92
5	0.21	4.12	22.41	83.75	12	0.21	4.15	24.35	74.07	19	0.21	4.24	24.12	82.54
6	0.21	4.14	22.73	81.85	13	0.21	4.19	23.59	82.58	20	−0.21	−4.22	−24.89	75.34
7	−0.21	−4.12	−22.80	81.87	14	−0.21	−4.19	-24.11	78.84					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. N. to 1900.0

1900 NOVEMBER 12. ZONE 221. CLAMP WEST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.2	2.9	5.0	7.3	9.6	11.6	c	3 7.28	303 54 9.6 5.0	III B	48.280	22 2 40.30	−17 10 41.14	−17 6449
2	9.0	27.7	29.9	32.0	34.3	36.4	c	3 32.06	303 54 " "	V	52.790	22 3 5.08	17 6 2.74	17 6454
3	8.7	21.6	23.9	26.0	28.2	30.3	c	17 26.00	305 4 10.0 5.0	III	48.280	22 16 58.97	15 57 25.04	16 6069
4	8.8	6.4	8.7	10.8	12.9	15.1	c	24 10.78	306 50 10.0 6.3	III	44.120	22 23 43.73	14 12 39.87	14 6290
5	8.8	23.1	25.5	27.7	29.8	32.0	c	25 27.62	305 44 10.0 6.0	III	47.450	22 25 0.56	15 17 38.95	15 6232
6	9.3	10.6	12.7	14.8	17.0	19.2	c	33 14.86	305 16 10.0 5.2	III	49.040	22 32 47.76	15 45 10.32	15 6252
7	8.5	55.4	57.6	59.6	1.8	4.0	c	47 59.68	307 22 9.8 6.3	III A	42.870	22 47 32.51	13 37 48.39	13 6292
8	9.0	3.5	5.8	7.9	10.1	12.1	c	52 7.88	307 22 " "	III	45.685	22 51 40.69	13 40 9.43	13 6306
9	8.6	38.3	40.4	42.5	44.8	47.0	c	52 42.60	303 58 10.2 6.4	V	46.440	22 52 15.40	17 4 5.05	17 6630
10	8.4	15.7	17.8	20.0	22.3	24.5	c	57 20.06	305 32 10.0 5.5	III	43.930	22 56 52.85	−15 30 48.22	−15 6330
11	8.9	1.0	3.4	5.6	7.7	9.9	c	58 5.52	303 10 10.0 5.8	V	48.340	22 57 38.30	−17 51 31.50	−18 6243
12	7.8	27.2	29.2	31.4	33.5	35.6	c	0 31.38	303 36 10.0 5.8	III	45.830	23 0 4.15	17 26 17.12	17 6663
13	9.1	49.8	51.9	54.0	56.0	58.1	c	6 53.96	306 28 10.4 7.0	III	49.150	23 6 26.70	14 33 4.80	14 6419
14	9.0	39.8	41.9	44.0	46.3	48.5	c	10 44.10	304 38 10.0 6.4	III	46.200	23 10 16.83	16 24 6.87	16 6246
15	8.0	14.0	16.0	18.2	20.5	22.6	c	14 18.26	307 2 10.0 6.2	III	46.410	23 13 50.97	13 59 56.66	14 6448[1]
16	9.3	53.2	55.2	57.0	59.0	1.3	a	19 26.91	305 34 10.0 5.5	I	47.600	23 18 59.60	15 27 36.52	15 6413
17	8.8	34.3	36.4	38.2	40.0	42.4	a	20 7.83	307 0 10.0 6.5	I	45.160	23 19 40.51	14 2 19.15	14 6466
18	8.9	42.3	44.3	46.1	48.0	......	a	21 16.16	304 20 10.0 6.5	I	48.050	23 20 48.84	16 41 30.76	16 6285
19	9.0	38.7	40.7	42.6	44.4	46.7	a	22 12.35	305 52 10.0 5.9	I	45.510	23 21 45.03	15 10 15.61	15 6423
20	8.9	23.7	25.9	27.9	30.2	32.3	c	22 28.00	305 40 11.0 6.8	V	44.190	23 22 0.68	−15 22 43.37	−15 6425
21	9.1	46.7	48.9	51.1	53.3	55.3	c	24 51.06	303 44 10.0 6.2	III	47.260	23 24 23.73	−17 17 49.38	−17 6759
22	8.8	34.1	36.4	38.6	40.6	42.8	c	27 38.50	307 12 10.0 6.2	III	43.740	23 27 11.15	−13 50 47.59	−14 6485

Reduction Elements. Zone 221.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 12.3....	−0.030	−0.105	+0.155	−0.026	−0.086	+0.162
12.4....	−0.023	−0.066	+0.168			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	Mayer 911		ι Aquarii		θ Aquarii		υ Aquarii		ω^2 Aquarii		Mayer 986	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	302 40 6.90		306 40 8.15		312 44 8.20		299 50 7.25		305 56 8.00		310 30 7.50	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.590	4 22.60	48.310	5 53.42	48.925	6 5.25	43.420	4 19.36	46.810	5 23.64	45.960	5 8.17
II Red. to Mer......	.600	5.17	.370	5.13	.965	5.07	.475	5.20	.820	5.14	46.020	5.10
VI Inclination	.790		.520		49.130		.570		.910		.120	
VII Refraction	.790	1 31.0	.510	1 18.4	.160	1 3.2	.630	1 41.8	.960	1 20.8	.175	1 8.6

	ι^2 Aquarii		2 Ceti	
	° ′ ″		° ′ ″	
CIRCLE READING.	301 34 7.00		303 8 7.50	
	r	′ ″	r	′ ″
I Microm. Eq......		5 34.12	48.140	5 49.35
II Red. to Mer......		5.18	.130	5.17
VI Inclination	47.435	−1.64	.275	
VII Refraction	.410	1 35.2	.320	1 29.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
Mayer 911	21 57 8.51	11	+0.07	−23.08	302 43 3.7	43.9
ι Aquarii	22 1 29.12	11	+0.05	−23.13	306 44 48.3	43.7
θ Aquarii	22 12 0.38	11	+0.04	−23.17	312 49 15.3	43.2
υ Aquarii	22 29 40.66	11	+0.08	−23.23	299 52 50.0	43.2
ω^2 Aquarii	23 37 59.56	11	+0.06	−23.22	306 0 16.0	44.3
Mayer 986	23 45 32.48	11	+0.04	−23.18	310 34 12.2	43.3
i^2 Aquarii	23 46 38.94	10	+0.07	−23.28	301 38 9.5	41.7
2 Ceti	23 59 4.45	11	+0.07	−23.25	303 12 32.4	43.0

h 22.165	*dt*	s −23.152
	Hourly rate	− 0.0493
	Adopted Equator Point	° ′ ″ 321 5 43.29

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
21 50	29.62	42.1	41.0
22 35	29.60	40.8	39.9
23 1	29.61	40.0	38.9
0 3	29.61	39.8	39.2

Note.
22. Clouds prevent further work.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+0.06	−3.89	−21.45	86.96	9	+0.06	−4.07	−22.88	86.84	17	+0.05	−4.16	−24.27	77.75
2	0.06	3.89	21.48	86.72	10	0.06	4.08	23.49	82.02	18	0.06	4.17	23.41	85.67
3	0.06	3.93	22.35	83.16	11	0.07	4.10	22.70	89.51	19	0.06	4.17	23.91	80.99
4	0.05	3.94	23.16	78.04	12	0.06	4.10	22.90	88.12	20	0.06	4.17	23.85	81.62
5	0.06	3.96	22.82	81.17	13	0.05	4.11	23.95	79.21	21	0.06	4.18	23.27	87.63
6	0.06	3.99	22.88	82.58	14	0.06	4.13	23.39	84.76	22	+0.05	−4.18	−24.38	77.20
7	0.05	4.04	23.94	76.54	15	0.05	4.14	24.22	77.64					
8	+0.05	−4.05	−24.00	76.68	16	+0.06	−4.16	−23.81	81.88					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. N. to 1900.0

1900 NOVEMBER 21. ZONE 222. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.3	17.5	19.7	21.8	24.0	26.2	c	29 21.84	54 26 10.0	8.7	V	42.300	23 28 50.61	−15 35 35.14	−15 6454
2	8.6	57.6	59.7	1.9	4.1	6.3	c	32 1.92	56 36 10.0	8.0	III	47.880	23 31 30.70	17 47 26.37	18 6342
3	7.8	36.9	39.1	41.3	43.4	45.7	c	32 41.28	52 44 10.0	8.9	III	42.275	23 32 10.03	13 53 29.30	14 6506
4	8.8	21.4	23.2	25.3	27.3	29.5	a	36 55.14	55 0 10.0	8.3	I	45.750	23 36 23.89	16 10 39.73	16 6336
5	9.4	43.8	45.8	48.0	50.2	52.3	c	40 48.02	54 44 10.0	8.4	III	43.820	23 40 16.75	15 54 3.65	16 6356
6	8.7	29.4	31.5	33.8	35.9	38.3	c	45 33.78	56 46 9.7	7.4	III	43.190	23 45 2.51	17 55 56.56	18 6378
7	9.2	35.3	37.4	39.6	41.8	44.0	c	48 39.62	55 26 10.0	8.4	III B	45.500	23 48 8.33	16 33 24.51	16 6381
8	9.1	41.5	43.6	45.9	48.0	50.3	c	52 45.86	55 26 "	"	III A	43.240	23 52 14.56	16 39 9.33	16 6390
9	6.0	39.4	41.6	43.8	46.1	48.3	c	53 43.84	55 14 10.0	9.2	III	44.300	23 53 12.53	16 24 14.68	16 6394
10	9.2	27.3	29.4	31.5	33.8	36.0	c	54 31.60	55 32 10.0	8.8	III A	47.810	23 54 0.29	−16 46 37.49	−17 6855
11	9.4	24.6	26.9	28.9	31.0	33.3	c	57 28.94	55 32 "	"	III	45.110	23 56 57.62	−16 42 30.85	−16 6405
12	9.4	15.2	17.3	19.4	21.6	23.7	c	1 19.44	53 48 10.0	9.1	V	47.795	0 0 48.10	14 59 19.11	15 6542
13	9.4	41.5	43.4	45.4	47.4	49.6	■	3 15.22	54 42 10.0	9.1	I	47.990	0 2 43.87	15 53 22.49	16 2
14	7.7	37.0	39.2	41.4	43.5	45.6	c	3 41.34	54 12 10.0	9.3	III	46.380	0 3 9.99	15 22 51.99	15 7
15	9.0	10.7	12.9	14.9	17.0	19.2	c	4 14.94	54 30 10.0	8.9	V	43.710	0 3 43.59	15 40 2.72	15 10
16	9.4	21.0	23.4	25.7	27.7	32.1	c_2 d_1	5 23.38	56 38 10.0	8.5	V	44.050	0 4 52.05	17 48 14.93	18 7
17	8.7	38.3	40.5	42.5	44.7	46.8	c	9 42.56	53 50 10.0	8.5	III	43.215	0 9 11.19	14 59 49.96	15 28
18	9.4	51.8	54.1	55.9	58.0	0.0	e	10 26.44	52 26 10.0	8.9	VII	44.840	0 9 55.05	13 36 20.59	13 32
19	......	20.7	23.0	24.8	26.7	28.7	e	10 55.25	52 26 "	"		50.720	0 10 23.86	−13 41 28.91	−13 37

Reduction Elements. Zone 222.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
November 21.3	+0.081	−0.398	+0.159	+0.076	−0.398	+0.169
21.4	+0.072		+0.179			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		h Aquarii		b^1 Aquarii		ω^2 Aquarii		2 Ceti		ι Ceti		9 Ceti	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		47 4 9.65		59 28 8.90		53 56 8.95		56 44 9.45		48 12 9.75		51 36 9.75	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	44.635	4 38.83	45.490	4 54.92	43.420	4 15.62	42.040	3 47.96	46.550	5 15.33	43.860	4 24.25
II	Red to Mer.	.600	4.93	.440	4.81	.380	4.86	41.950	4.83	.460	4.92	.860	4.88
VI	Inclination	.455		.310		.270		.795		.400		.715	
VII	Refraction	.465	1 0.2	.270	1 34.8	.240	1 16.9	.760	1 25.6	.360	1 3.1	.680	1 11.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
h Aquarii	23 0 28.04	11	−0.07	−27.15	47 9 53.6	18.1
b^1 Aquarii	23 18 14.35	11	+0.02	−27.19	59 34 43.4	17.1
ω^2 Aquarii	23 38 3.46	11	−0.02	−27.14	54 1 46.3	17.1
2 Ceti	23 59 8.35	11	0.00	−27.17	56 49 27.8	16.2
ι Ceti	0 14 51.36	11	−0.06	−27.10	48 18 33.1	15.8
9 Ceti	....	..	....	.....	51 41 50.1	16.6

h 23.636.......... *dt*.................... s −27.150
Hourly rate 0.0000
Adopted Equator Point........ 38° 56′ 16.82″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
22 57	29.74	66.0	66.4
23 42	29.75	64.8	65.9
0 17	29.78	63.0	62.8

Note.
19. Bisected 8ˢ beyond VII.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.02	−4.06	+22.80	78.25	8	−0.01	−4.14	+22.43	81.62	15	−0.02	−4.18	+22.64	78.83
2	0.00	4.07	22.07	84.95	9	0.01	4.15	22.49	80.88	16	0.00	4.18	21.97	85.40
3	0.03	4.07	23.38	73.59	10	0.01	4.15	22.36	82.02	17	0.02	4.20	22.79	77.02
4	0.01	4.09	22.62	80.02	11	0.01	4.16	22.37	81.84	18	0.03	4.21	23.21	73.24
5	0.02	4.10	22.70	79.25	12	0.02	4.17	22.56	76.87	19	−0.03	−4.21	+23.18	73.48
6	0.00	4.12	22.03	85.57	13	0.02	4.18	22.58	79.46					
7	−0.01	−4.13	+22.47	81.29	14	−0.02	−4.18	+22.74	78.01					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1900 DECEMBER 1. ZONE 223. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.4	6.3	8.3	10.6	12.7	15.0	c	28 10.58	54 58 10.0 12.5	III	43.680	23 27 38.95	−16 8 14.05	−16 6310
2	7.7	53.9	56.1	58.3	0.4	2.5	c	53 58.24	53 26 10.0 11.3	III A	48.470	23 53 26.50	14 40 56.13	14 6588
3	8.9	26.2	28.8	30.5	32.6	34.8	c	54 30.58	53 26 " "	V C	44.695	23 53 58.83	14 30 3.90	14 6590
4	8.8	27.5	29.6	31.7	33.7	36.0	c	57 31.70	54 4 10.0 12.7	III	42.940	23 56 59.95	15 13 57.48	15 6531
5	9.3	44.0	46.0	48.3	50.4	52.6	c	1 48.26	55 48 10.0 12.6	III	45.360	0 1 16.52	16 58 48.64	17 6874
6	8.7	31.4	33.4	35.6	37.9	40.0	c	3 35.66	55 4 10.0 13.3	III	46.190	0 3 3.89	16 15 2.81	16 6
7	9.5	55.3	57.5	59.7	1.8	4.0	c	4 59.66	55 4 " "	III A	40.370	0 4 27.89	16 16 25.94	16 11
8	5.5	38.0	40.1	42.2	44.5	46.6	c	6 42.28	54 50 10.0 12.3	III	46.205	0 6 10.50	16 1 1.91	16 17
9	9.0	6.2	8.4	10.7	12.8	15.0	c	10 10.62	56 32 10.0 11.1	III	44.680	0 9 38.86	17 42 36.93	17 22
10	8.6	26.9	28.9	31.0	33.3	35.4	c	11 31.10	53 26 10.0 12.9	III	44.940	0 10 59.29	−14 36 34.13	−14 32
11	9.3	55.0	57.2	59.3	1.6	3.9	c	17 59.40	56 30 10.0 11.5	III	43.430	0 17 27.61	−17 40 12.93	−17 43
12	8.3	19.0	21.1	23.5	25.6	27.6	c	18 23.36	56 2 10.0 13.0	V	48.120	0 17 51.56	17 13 43.69	17 46
13	8.7	28.5	30.5	32.6	34.9	37.0	c	20 32.70	54 50 10.0 11.5	III	42.690	0 20 0.87	15 59 53.81	16 64
14	8.4	59.5	1.6	3.7	5.9	8.1	c	23 3.76	54 50 " "	III	44.500	0 22 31.92	16 0 28.52	16 75
15	8.5	22.0	24.2	26.3	28.5	30.8	c	31 26.36	54 50 " "	III	46.210	0 30 54.49	16 1 1.18	16 102
16	8.2	29.7	31.9	34.0	36.1	38.3	c	35 34.00	53 16 10.0 12.2	III	43.370	0 35 2.10	14 26 2.77	14 110
17	9.2	8.3	10.5	12.7	15.0	17.3	c	37 12.76	55 44 10.0 13.4	III	47.540	0 36 40.89	16 55 30.10	17 113
18	9.2	59.2	1.4	5.7	7.2	10.0	c_4 d_3	58 57.09	54 48 10.0 13.2	III	45.545	0 58 25.13	15 58 48.50	16 171
19	9.6	35.6	......	42.0	43.4	46.4	c_4 d_3	5 33.42	54 48 10.0 13.2	VI	47.490	1 5 1.44	15 59 27.43	16 189
20	7.7	47.4	49.4	51.6	53.7	55.9	c	6 51.60	52 52 10.0 13.0	V	43.620	1 6 19.58	−14 2 7.47	−14 225
21	8.9	35.0	37.4	39.5	41.7	43.8	c	7 39.48	52 58 10.0 12.3	VI	47.840	1 7 7.46	−14 9 28.94	−14 228
22	8.4	19.9	21.9	24.2	26.3	28.6	c	10 24.18	56 36 10.0 12.4	III	43.270	1 9 52.27	−17 46 9.40	−18 199

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.	α 1900.0	δ 1900.0	B.D.
		s	s	s	s	s		m s	° ′ ″ ″	r	h m s	° ′ ″	°
23	9.4	10.6	12.7	14.9	17.0	19.2	c	16 14.88	55 32 10.0 13.5	III 45.400	1 15 42.88	−16 42 47.40	−16 224
24	9.2	58.7	0.8	2.9	5.2	7.3	c	17 2.98	56 6 10.0 12.0	III 43.120	1 16 30.99	17 16 4.57	17 238
25	8.0	51.5	53.7	55.8	58.0	0.2	c	20 55.84	54 20 10.0 12.0	III 45.940	1 20 23.81	15 30 53.45	15 263
26	8.2	59.3	1.2	3.4	5.7	7.8	c	24 3.48	55 14 10.0 13.0	III 47.710	1 23 31.45	16 25 30.37	16 247
27	9.1	37.5	39.5	41.7	43.8	46.0	c	30 41.70	53 14 10.0 12.9	III 44.955	1 30 9.61	14 24 31.68	14 298
28	8.8	56.8	58.9	1.0	3.3	5.6	c	35 1.12	56 34 10.0 13.0	III 47.760	1 34 29.09	17 45 34.90	17 297
29	8.7	37.9	39.9	......	44.4	46.6	c	37 42.20	56 34 " "	III B 43.260	1 37 10.16	17 40 55.10	17 304
30	9.3	24.8	27.0	29.2	31.4	33.6	c	44 29.20	56 14 10.0 12.4	III 43.830	1 43 57.13	−17 24 17.77	−17 322
31	8.9	12.7	14.8	16.9	19.0	21.2	c	45 16.92	54 24 10.0 12.5	III 47.580	1 44 44.82	−15 35 24.36	−15 324
32	8.8	48.8	50.9	53.0	55.3	57.5	c	48 53.10	56 42 10.0 11.6	V 45.630	1 48 21.04	17 52 54.59	18 322
33	8.2	55.1	57.3	59.3	1.5	3.8	c	50 59.40	53 26 10.0 11.9	III 42.785	1 50 27.26	14 35 49.16	14 358
34	9.5	47.5	49.7	51.9	54.2	56.3	c	51 51.92	56 10 10.0 11.2	III 42.890	1 51 19.83	17 19 58.61	17 352
35	9.2	52.8	54.8	57.0	59.3	1.5	c	57 57.08	55 38 10.0 13.4	III 45.630	1 57 24.97	16 48 50.38	17 375
36	9.4	......	......	......	......	......	......	....	55 38 " "	VI 43.150	1 58 10	16 48 4.77	17 378
37	7.8	37.5	39.6	41.8	44.0	46.2	c	2 41.82	55 0 10.0 13.2	III 45.940	2 2 9.68	−16 10 54.13	−16 374

Reduction Elements. Zone 223.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
December 1.3....	+0.108	−0.164	+0.354	+0.109	−0.147	+0.360
1.4....	+0.110	−0.130	+0.367			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	b^1 Aquarii		ω^2 Aquarii		i^3 Aquarii		2 Ceti		19 Ceti		22 Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	59 28 11.10		53 56 10.60		58 18 11.50		56 42 10.90		50 0 11.40		50 38 11.80	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	44.810	4 41.04	42.840	4 4.02	42.210	3 52.08	47.700	5 36.62	46.765	5 19.25	45.175	4 48.29
II Red. to Mer......	.785	4.81	.780	4.86	.190	4.82	.625	4.83	.730	4.90	.100	4.89
VI Inclination	.500		.645		.025		.455		.530		44.960	
VII Refraction.......	.520	1 39.9	.630	1 21.0	41.980	1 35.5	.430	1 30.0	.560	1 10.6	.895	1 12.2

	Lalande 1691		η Ceti		Piazzi I. 167		ζ Ceti		υ Ceti		Lalande 3979	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	59 0 10.70		49 32 11.70		45 4 11.70		49 40 11.80		60 22 11.90		57 4 11.70	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.580	4 17.79	46.080	5 6.10	44.340	4 32.92	43.020	4 8.08	47.805	5 37.27	46.590	5 15.31
II Red. to Mer......	.555	4.81	.020	4.90	.310	4.94	42.995	4.90	.650	4.79	.500	4.83
VI Inclination	.330		45.895		.140		.890		.470		.345	
VII Refraction.......	.305	1 38.5	.850	1 9.5	.135	59.6	.835	1 9.9	.420	1 44.3	.330	1 31.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
b^1 Aquarii...........	23 18 14.65	11	+0.37	−27.96	59 34 36.9	9.7
ω^2 Aquarii...........	23 38 3.86	11	+0.32	−28.00	54 1 40.5	10.3
i^3 Aquarii...........	23 46 43.12	11	+0.36	−27.99	58 23 43.9	9.5
2 Ceti..............	23 59 8.76	11	+0.35	−28.05	56 49 22.4	9.7
19 Ceti..............	0 45 39.05	11	+0.30	−28.05	50 6 46.2	9.8
22 Ceti..............	0 51 32.61	11	+0.30	−28.03	50 44 17.2	10.0
Lalande 1691......	0 54 19.83	11	+0.36	−28.02	59 6 11.8	9.5
η Ceti..............	1 4 5.66	11	+0.29	−28.11	49 38 32.2	9.4
Piazzi I. 167.......	1 41 30.31	11	+0.26	−27.99	45 9 49.2	9.4
ζ Ceti..............	1 47 3.61	11	+0.29	−27.99	49 45 34.7	9.7
υ Ceti..............	1 55 49.64	11	+0.38	−28.08	60 29 38.3	10.3
Lalande 3979......	2 4 33.25	11	+0.35	−28.02	57 11 3.5	9.2

h 0.815	............*dt*....................	s −28.024
	Hourly rate...........	0.0000
	Adopted Equator Point.........	° ′ ″ 38 56 9.71

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
23 20	29.87	43.1	42.1
0 7	29.88	42.5	41.2
0 28	29.88	42.6	41.0
1 18	29.89	41.3	40.0
2 0	29.89	40.6	39.1

Note.
22 Ceti. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+0.33	−3.94	+21.74	84.13	14	+0.33	−4.15	+21.19	83.93	27	+0.32	−4.39	+19.45	79.40
2	0.32	4.04	22.09	79.89	15	0.33	4.18	21.00	83.98	28	0.35	4.36	18.35	89.89
3	0.32	4.05	22.14	79.37	16	0.32	4.20	21.40	79.28	29	0.35	4.37	18.27	89.64
4	0.33	4.06	21.87	81.52	17	0.34	4.19	20.58	86.88	30	0.34	4.39	18.04	88.74
5	0.34	4.06	21.23	86.97	18	0.33	4.27	20.23	83.97	31	0.33	4.41	18.45	82.94
6	0.33	4.08	21.44	84.65	19	0.33	4.29	20.00	84.02	32	0.35	4.39	17.71	90.37
7	0.33	4.08	21.42	84.72	20	0.32	4.32	20.54	78.25	33	0.32	4.44	18.42	80.03
8	0.33	4.09	21.48	83.92	21	0.32	4.32	20.46	78.60	34	0.34	4.41	17.71	88.53
9	0.35	4.09	20.87	89.41	22	0.35	4.24	19.32	89.82	35	0.34	4.43	17.52	86.85
10	0.32	4.11	21.87	79.72	23	0.34	4.32	19.40	86.34	36	....	....	17.49	86.81
11	0.35	4.12	20.76	89.30	24	0.34	4.31	19.22	88.17	37	+0.33	−4.45	+17.43	84.84
12	0.34	4.12	20.90	87.83	25	0.33	4.34	19.56	82.63					
13	+0.33	−4.14	+21.24	83.89	26	+0.33	−4.34	+19.18	85.47					

a = Instrumental corrections.
A = *α* to 1900.0
D = Z. D. S. to 1900.0

1900 DECEMBER 15. ZONE 224. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		*α* 1900.0	*δ* 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	8.4	31.0	33.2	35.3	37.5	39.7	c	10 35.34	55 26 10.0 14.0	III	44.720	0 9 55.76	−16 36 40.18	−16 37
2	8.6	32.4	34.6	36.8	39.0	41.2	c	12 36.80	53 44 10.0 12.0	III	42.855	0 11 57.18	14 53 58.51	15 42
3	8.7	50.1	52.0	53.9	55.7	58.0	a	19 23.87	55 50 10.0 14.6	I	43.930	0 18 44.26	17 0 24.74	17 50
4	8.3	27.2	29.3	31.4	33.7	35.9	c	19 31.50	53 44 10.0 13.8	III	43.040	0 18 51.85	14 54 2.80	15 60
5	9.3	10.4	12.5	14.8	16.9	19.2	c	24 14.76	56 34 10.0 11.6	III	50.410	0 23 35.13	17 46 31.43	18 64
6	9.0	36.8	39.0	41.2	43.3	45.5	c	24 41.16	56 34 " "	III	49.420	0 24 1.52	17 46 12.41	18 67
7	8.7	19.0	21.0	23.3	25.5	27.7	c	25 23.30	56 34 " "	III	47.580	0 24 43.66	17 45 37.08	18 70
8	8.8	39.9	42.1	44.3	46.4	48.7	c	31 44.28	56 0 10.0 13.7	III	47.620	0 31 4.61	17 11 36.96	17 87
9	9.0	6.9	9.1	11.2	13.4	15.6	c	36 11.24	56 0 " "	III	52.170	0 35 31.56	17 13 4.18	17 110
10	8.9	13.0	15.0	17.3	19.6	21.8	c	47 17.34	56 26 10.0 11.5	V	46.530	0 46 37.61	−17 37 17.27	−17 149
11	8.5	28.2	30.4	32.8	34.8	37.0	c	54 32.64	54 32 10.0 12.6	III	42.420	0 53 52.85	−15 41 51.54	−15 179
12	8.6	10.0	12.2	14.5	16.5	18.8	c	56 14.40	56 26 10.0 13.5	III	45.415	0 55 34.62	17 36 55.19	17 175
13	8.5	34.0	36.2	38.4	40.5	42.6	c	2 38.34	53 30 10.0 15.3	III	42.370	1 1 58.49	14 39 48.77	14 212
14	8.9	21.0	23.0	25.3	27.4	29.7	c	6 25.28	56 30 10.0 14.5	III	47.395	1 5 45.47	17 41 33.51	17 206
15	8.8	29.5	31.7	33.9	36.0	38.3	c	7 33.88	53 4 10.0 12.0	III	41.705	1 6 54.00	14 13 32.99	14 227
16	9.2	20.7	22.9	25.2	27.3	29.5	c	8 25.12	55 56 10.0 12.1	III	45.545	1 7 45.29	17 6 54.94	17 210
17	9.0	44.7	46.7	49.0	51.2	53.4	c	16 49.00	53 56 10.0 12.1	III	44.070	1 16 9.09	15 6 20.40	15 250
18	8.8	8.7	10.6	12.9	15.0	17.3	c	22 12.90	55 52 15.0 14.8	III	45.565	1 21 33.01	[17 2 58.37]	17 261
19	8.6	25.7	27.8	30.0	32.3	34.5	c	26 30.06	53 30 10.0 12.5	III	46.635	1 25 50.10	14 41 8.20	14 292
20	8.9	55.7	57.8	0.2	2.2	4.4	c	30 0.06	55 30 10.0 15.0	III	47.060	1 29 20.13	−16 41 23.17	−16 262
21	9.1	51.1	53.2	55.4	57.6	59.9	c	30 55.44	55 30 " "	III	45.350	1 30 15.50	−16 40 50.31	−16 266
22	8.9	27.9	30.2	32.4	34.6	36.8	c	37 32.38	56 20 10.0 11.7	III	47.190	1 36 52.43	−17 31 26.25	−17 303

Reduction Elements. Zone 224.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
December 15.3....	+0.122	−0.024	+0.469	+0.124	−0.017	+0.496
15.4....	+0.127	−0.010	+0.524			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ι² Aquarii		27 Piscium		2 Ceti		ι Ceti		η Ceti		39 Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	58 16 11.60		42 56 11.25		56 42 10.75		48 12 12.30		49 32 11.85		41 52 11.30	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	48.300	5 48.00	46.220	5 8.98	47.460	5 32.60	45.815	5 1.31	45.915	5 2.79	43.090	4 8.98
II Red. to Mer.	.210	4.82	.210	4.96	.415	4.83	.770	4.92	.865	4.90	.060	4.97
VI Inclination	.075		.025		.260		.660		.720		42.920	
VII Refraction	.000	1 39.7	45.990	57.4	.235	1 34.0	.600	1 9.2	.650	1 12.6	.860	55.6

	ζ Ceti	
	° ′ ″	
CIRCLE READING.	49 40 11.45	
	r	′ ″
I Microm. Eq.		4 2.50
II Red. to Mer.		4.90
VI Inclination	42.630	1.74
VII Refraction	.660	1 13.0

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ι² Aquarii	23 46 50.97	10	+0.57	−36.24	58 23 44.1	8.5
27 Piscium	23 54 12.83	11	+0.45	−36.18	43 2 22.6	8.5
2 Ceti	23 59 16.56	11	+0.56	−36.23	56 49 22.2	8.2
ι Ceti	0 14 59.58	11	+0.49	−36.12	48 18 27.7	8.2
η Ceti	1 4 13.44	11	+0.50	−36.23	49 38 32.1	7.7
39 Ceti	1 12 11.74	11	−0.44	−36.23	41 57 20.8	7.1
ζ Ceti	1 47 11.57	7	+0.50	−36.26	49 45 33.6	6.9

h 23.980 . . . . *dt* . . . . s −36.192
Hourly rate . . . . — 0.0350

Adopted Equator Point . . . . 38° 56′ 7.87″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
23 48	30.14	26.1	25.9
0 16	30.15	25.4	24.7
1 13	30.15	24.0	23.7
1 43	30.14	24.2	23.3
1 57	30.15	24.1	23.4

Note.
22, ζ Ceti. Clouds.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+0.55	−3.93	+19.90	89.56	9	+0.55	−4.02	+19.00	91.76	17	+0.53	−4.20	+18.10	84.99
2	0.53	3.95	20.45	84.11	10	0.55	4.06	18.49	93.21	18	0.55	4.20	17.24	91.33
3	0.55	3.96	19.54	90.94	11	0.54	4.11	18.85	86 79	19	0.53	4.25	17.78	83.72
4	0.53	3.98	20.26	84.15	12	0.55	4.10	18.17	93.23	20	0.55	4.23	16.98	90.12
5	0.55	3.97	19.16	93.65	13	0.53	4.15	18.87	83.61	21	0.55	4.24	16.94	90.09
6	0.55	3.98	19.14	93.63	14	0.55	4.13	17.73	93.53	22	+0.55	−4.25	+16.34	92.99
7	0.55	3.98	19.13	93.60	15	0.53	4.18	18.80	82.30					
8	+0.55	−4.01	+19.14	91.65	16	+0.55	−4.15	+17.84	91.52					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1900 DECEMBER 20. ZONE 225. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.4	17.7	19.8	22.0	24.2	26.4	c	42 22.02	55 38 10.0 12.0	V	43.450	1 41 37.59	−16 48 12.87	−17 315
2	9.0	7.4	9.5	11.6	13.8	15.9	c	45 11.64	56 2 10.0 12.5	III B	45.350	1 44 27.21	17 9 35.64	17 324
3	9.1	43.5	45.6	47.7	49.9	52.4	c	45 47.76	56 2 " "	III A	45.720	1 45 3.34	17 16 11.11	17 327
4	8.6	19.6	21.7	23.9	26.0	28.2	c	47 23.88	56 2 " "	III A	38.950	1 46 39.45	17 14 1.07	17 330
5	9.2	13.3	15.3	17.5	19.6	22.0	c	50 17.54	55 2 10.0 13.9	III	44.340	1 49 33.07	16 12 27.28	16 329
6	9.0	. . . . . .	15.5	17.6	19.5	21.7	a	51 47.62	56 26 10.0 10.3	I	47.470	1 51 3.18	17 37 27.90	17 348
7	9.0	2.2	4.3	6.5	8.7	11.0	c	52 6.54	55 4 10.0 12.4	III	47.175	1 51 22.06	16 15 20.93	16 337
8	9.3	39.8	41.8	44.2	46.3	48.5	c	57 44.12	56 14 10.0 12.1	III	48.410	1 56 59.65	17 25 47.64	17 370
9	9.3	50.0	52.1	54.3	56.6	58.9	c	58 54.38	55 38 10.0 10.2	III	43.240	1 58 9.88	16 48 5.58	17 378
10	8.2	25.2	27.2	31.6	33.3	36.0	$c_4 d_3$	59 22.98	56 20 10.0 11.4	VI	45.470	1 58 38.50	−17 30 53.26	−17 381
11	8.8	. . . . . .	24.5	26.4	28.4	30.7	a	3 56.50	56 8 10.0 12.2	I	44.465	2 3 12.00	−17 18 29.62	−17 394
12	8.9	16.0	18.2	20.5	22.6	24.7	c	11 20.40	55 22 10.0 10.7	III	43.655	2 10 35.85	16 32 12.33	16 406
13	8.2	20.9	23.0	25.2	27.4	29.5	c	18 25.20	54 32 10.0 11.8	III	41.830	2 17 40.59	−15 41 35.06	−15 414

Reduction Elements. Zone 225.

	OBSERVED.			ADOPTED.		
1900.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
December 20.3....	+0.156	−0.089	+0.409	+0.160	−0.078	+0.396
20.4....	+0.164	−0.066	+0.383			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	θ Ceti		48 Ceti		50 Ceti		Lalande 3979		67 Ceti		ρ Ceti	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	47 32 11.30		60 58 12.25		54 44 12.00		57 4 11.45		45 42 11.50		51 34 10.80	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.810	4 22.19	44.310	4 32.64	45.200	4 48.67	46.440	5 13.33	47.260	5 28.50	45.165	4 48.06
II Red. to Mer......	.745	4.92	.265	4.78	.140	4.85	.410	4.83	.180	4.94	.080	4.88
VI Inclination	.570		.140		44.930		.260		.055		44.935	
VII Refraction	.560	1 4.8	.150	1 46.8	.940	1 24.0	.240	1 31.9	.020	1 1.1	.900	1 15.1

	σ Ceti	
	° ′ ″	
CIRCLE READING.	54 30 10.65	
	r	′ ″
I Microm. Eq......	46.485	5 13.58
II Red. to Mer......	.435	4.85
VI Inclination	.255	
VII Refraction	.230	1 23.6

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
θ Ceti	1 19 45.91	11	+0.40	−40.60	47 37 43.2	5.0
48 Ceti	1 25 32.56	11	+0.51	−40.69	61 4 36.5	3.6
50 Ceti	1 31 50.75	11	+0.46	−40.68	54 50 29.5	3.7
Lalande 3979......	2 4 45.65	11	+0.47	−40.69	57 11 1.5	4.2
67 Ceti	2 12 44.47	11	+0.39	−40.65	45 48 46.0	4.2
ρ Ceti	2 21 51.80	11	+0.43	−40.70	51 40 18.8	4.0
σ Ceti	2 28 5.47	11	+0.45	−40.70	54 36 52.7	4.9

h		s
1.430	............*dt*	−40.657
	Hourly rate	− 0.0329
		° ′ ″
	Adopted Equator Point.........	38 56 4.23

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
1 23	29.745	39.1	37.4
2 0	29.75	37.3	36.1
2 28	29.76	36.4	35.2

Note.
Faint stars difficult.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+0.46	−4.22	+15.62	86.82	6	+0.47	−4.24	+14.83	89.60	11	+0.47	−4.29	+14.19	88.63
2	0.46	4.22	15.34	88.00	7	0.46	4.27	15.22	85.13	12	0.46	4.33	13.94	86.16
3	0.47	4.22	15.29	88.38	8	0.47	4.27	14.53	88.99	13	+0.45	−4.37	+13.72	83.56
4	0.47	4.23	15.20	88.27	9	0.46	4.28	14.65	86.92					
5	+0.46	−4.26	+15.34	84.97	10	+0.47	−4.27	+14.41	89.29					

a = Instrumental corrections.
A = *α* to 1900.0
D = Z. D. S. to 1900.0

1901 FEBRUARY 21. ZONE 226. CLAMP EAST.

KING, OBSERVER. HAMMOND, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	……	5.2	7.4	9.5	11.8	13.9	c	53 9.56	54 50 10.0 6.7	III	47.365	4 52 54.43	−16 1 1.39	−16 1000
2	……	7.2	9.4	11.6	13.8	15.9	c	23 11.58	52 42 10.0 7.0	III	46.385	5 22 56.22	13 52 33.23	13 1157
3	……	22.2	24.0	26.0	28.0	30.2	a	25 55.77	54 16 10.0 7.4	I	47.470	5 25 40.47	15 26 56.53	15 1058
4	……	13.2	15.5	17.6	19.9	21.9	c	26 17.62	54 12 10.0 7.1	III	49.015	5 26 2.32	15 23 27.48	15 1060
5	……	35.6	37.7	39.9	42.1	44.3	c	32 39.92	54 30 10.0 7.1	III	46.520	5 32 24.59	15 40 39.70	15 1099
6	……	23.2	25.5	27.6	29.8	31.9	c	35 27.60	54 4 10.0 6.5	III	42.845	5 35 12.23	15 13 27.31	15 1111
7	……	2.2	4.6	6.7	8.8	11.0	c	3 6.66	56 38 10.0 7.3	III	45.175	6 2 51.27	17 48 17.03	17 1360
8	……	13.3	15.5	17.6	19.8	22.0	c	5 17.64	53 24 10.0 7.5	III	45.020	6 5 2.10	14 34 4.28	14 1348
9	……	3.4	5.5	7.8	9.9	12.0	c	7 7.72	54 36 10.0 8.3	III	45.355	6 6 52.22	15 46 14.29	15 1299
10	……	1.1	3.6	5.5	7.3	9.3	e	7 35.16	56 58 10.0 6.9	VII	49.780	6 7 19.76	−18 9 48.62	−18 1334
11	……	5.3	7.4	9.6	11.7	14.0	c	9 9.60	54 12 10.0 8.2	III	42.835	6 8 54.07	−15 21 24.49	−15 1314
12	……	46.9	49.0	51.2	53.4	55.6	c	20 51.22	53 54 10.0 6.8	III	48.160	6 20 35.60	15 5 3.86	15 1377
13	……	24.8	26.9	29.0	31.2	33.4	c	25 29.06	53 8 10.0 6.8	V	44.080	6 25 13.39	14 17 44.46	14 1471
14	……	55.7	57.9	0.0	2.3	4.5	c	41 0.10	55 24 10.0 6.6	III	47.245	6 40 44.44	[16 34 48.49]	16 1591
15	……	38.9	41.2	43.3	45.6	49.8	c_2 d_1	41 41.18	54 40 10.0 6.1	III	(44).545	6 41 25.49	15 49 54.11	15 1502
16	……	28.9	31.0	33.2	35.4	37.5	c	42 33.20	53 8 10.0 6.5	III	48.540	6 42 17.44	14 19 6.55	14 1584
17	……	41.1	43.3	45.7	47.7	50.0	c	1 45.56	54 44 10.0 7.7	III	45.755	7 1 29.75	15 54 16.28	15 1643[1]
18	……	……	15.1	17.0	18.8	21.0	e	1 47.10	54 44 10.0 7.7	V	45.185	7 1 31.29	15 54 6.85	15 1643[2]
19	……	19.3	21.6	23.7	26.0	28.3	c	4 23.78	56 20 10.0 6.2	III	46.680	7 4 8.01	17 30 38.00	17 1795
20	……	24.9	27.0	29.0	31.1	46.5	a_2 b_2	11 56.62	53 30 10.0 7.0	I	48.020	7 11 40.70	−14 40 53.16	−14 1798
21	……	8.7	10.8	13.0	15.2	17.3	c	12 13.00	53 30 10.0 7.0	III	50.920	7 11 57.08	−14 41 50.49	−14 1803
22	……	50.5	52.6	54.8	57.0	59.1	c	17 54.80	56 26 10.0 6.6	III	51.680	7 17 38.95	17 38 13.27	17 1935
23	……	29.8	31.9	34.2	36.3	38.5	c	25 34.14	52 58 10.0 7.5	III	48.535	7 25 18.12	14 9 2.18	14 1928
24	……	31.6	33.7	35.8	38.0	40.1	c	26 35.84	53 50 10.0 6.7	III	47.950	7 26 19.84	15 0 52.92	14 1939
25	……	58.6	0.6	2.9	5.0	7.0	c	32 2.82	53 6 10.0 6.5	III	46.700	7 31 46.85	14 16 26.26	14 2012
26	……	51.5	53.4	55.5	57.4	59.6	a	35 25.51	56 28 10.0 6.6	I	46.450	7 35 9.55	17 38 29.71	17 2081
27	……	41.0	42.8	44.9	46.8	49.0	a	36 14.94	56 32 10.0 7.0	III	49.380	7 35 58.98	17 43 28.02	17 2092
28	……	52.0	54.4	56.2	58.0	0.1	e	36 26.53	53 6 10.0 7.0	V	48.020	7 36 10.45	14 16 52.96	14 2089
29	……	9.4	11.3	13.5	15.8	17.9	c	44 13.58	56 4 10.0 7.0	III	(44).655	7 43 57.55	−17 13 55.09	−17 2165

Reduction Elements. Zone 226.

	OBSERVED.			ADOPTED.		
1901.	c	b	a	c	b	a
	s	s	s	s	s	s
February 21.2....	+0.142	+0.014	+0.593	+0.128	+0.018	+0.584
21.3....	+0.113	+0.023	+0.575			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		60 Eridani		64 Eridani		ε Leporis		λ Eridani		γ Leporis		ζ Leporis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	55 14 9.00		51 32 8.70		61 20 9.45		47 44 9.05		61 18 9.20		53 42 8.65	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......		3 53.88	41.870	3 45.08	44.065	4 27.13	41.840	3 44.92	45.930	5 3.38	43.280	4 12.29
II	Red. to Mer......		4.85	.835	4.88	43.990	4 78	.810	4.92	.920	4.78	.240	4.86
VI	Inclination	42.205	1.88	.640		.835		.660		.740		.070	
VII	Refraction.......	.185	1 27.5	.600	1 16.5	.825	1 51.0	.600	1 6.9	.685	1 51.0	.030	1 22.8

		δ Leporis		η Leporis		θ Canis Majoris		19 Canis Majoris		Piazzi VI. 303		γ Canis Majoris	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	59 42 8.55		53 0 8.45		50 44 8.50		58 50 8.50		64 6 8.75		54 18 9.70	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	47.675	5 36.92	48.480	5 52.31	48.040	5 43.44		5 2.87	45.245	4 49.33	48.550	5 53.25
II	Red. to Mer......	.655	4.80	.440	4.87	47.990	4.89	45.915	4.83	.175	4.75	.505	4.86
VI	Inclination	.475		.300		.825		.745	0.75	44.985		.340	
VII	Refraction.......	.465	1 44.1	.260	1 20.9	.775	1 14.7	.715	1 40.9	.940	2 5.4	.280	1 25.0

		9 Navis		c Navis		ι Navis		20 Navis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
	CIRCLE READING.	52 28 9.15		61 26 9.25		62 50 8.75		54 18 9.25	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......		4 52.90	46.380	5 11.92	46.635	5 16.46	49.080	6 3.40
II	Red. to Mer......	45.400	4.89	.335	4.78	.570	4.76	.040	4.86
VI	Inclination	.230	0.75	.200		.425		48.850	
VII	Refraction.......	.190	1 19.6	.140	1 52.2	.375	1 59.1	.825	1 25.2

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
60 Eridani	4 45 56.32	11	+0.64	−11.66	55 19 37.1	2.7
64 Eridani	4 55 32.23	11	+0.61	−11.60	51 37 15.2	2.5
ε Leporis	5 1 28.48	11	+0.70	−11.51	61 26 32.4	2.0
λ Eridani	5 4 37.00	11	+0.58	−11.48	47 49 5.8	2.4
γ Leporis	5 40 32.69	11	+0.70	−11.54	61 25 8.4	1.0
ζ Leporis	5 42 40.82	11	+0.63	−11.52	53 47 48.6	1.8
δ Leporis	5 47 16.40	11	+0.69	−11.52	59 49 34.4	2.8
η Leporis	5 52 6.45	11	+0.62	−11.51	53 7 26.5	2.7
θ Canis Majoris	6 49 48.52	11	+0.61	−11.58	50 51 11.5	2.9
19 Canis Majoris	6 51 32.85	11	+0.68	−11.56	58 56 57.8	3.1
Piazzi VI. 303	6 54 45.48	10	+0.73	−11.61	64 13 8.2	2.7
γ Canis Majoris	6 59 29.84	11	+0.64	−11.53	54 25 32.8	2.7
9 Navis	7 47 24.60	11	+0.62	−11.60	52 34 27.3	2.7
e Navis	7 52 49.49	11	+0.70	−11.69	61 33 18.2	2.6
ι Navis	8 3 33.03	11	+0.72	−11.64	62 57 29.1	2.3
20 Navis	8 9 0.36	11	+0.64	−11.59	54 25 42.7	1.3

6.500 h ...... *dt* .... −11.539 s

Hourly rate. − 0.0247 s −0.0526 (T−6.500 h)

Adopted Equator Point.......... 38° 56′ 2.39″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
4 47	29.655	26.0	25.0
5 19	29.655	25.2	24.4
5 58	29.66	24.0	24.1
6 31	29.66	23.2	23.2
7 9	29.66	23.2	22.8
7 41	29.65	22.3	22.1
8 7	29.67	22.2	21.8

Note.

21. Double.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+0.64	−4.20	− 8.08	86.24	11	+0.64	−4.64	−17.01	84.41	21	+0.63	−4.98	−23.66	82.60
2	0.62	4.44	11.17	79.83	12	0.63	4.71	18.28	83.63	22	0.66	4.93	24.73	92.08
3	0.64	4.40	11.91	84.55	13	0.63	4.76	18.62	81.30	23	0.62	5.06	24.88	81.01
4	0.64	4.40	11.95	84.37	14	0.65	4.77	20.81	88.43	24	0.63	5.04	25.12	83.60
5	0.64	4.43	12.80	85.28	15	0.64	4.79	20.74	86.02	25	0.63	5.01	25.50	81.40
6	0.63	4.46	13.01	83.88	16	0.63	4.84	20.51	81.41	26	0.66	5.02	26.35	92.16
7	0.66	4.52	16.89	92.40	17	0.64	4.89	22.85	86.29	27	0.66	5.02	26.43	92.45
8	0.63	4.64	16.37	82.00	18	0.64	4.89	22.85	86.28	28	0.63	5.11	25.91	81.43
9	0.64	4.61	16.87	85.69	19	0.65	4.86	23.42	91.61	29	+0.65	−5.07	−27.05	90.75
10	+0.66	−4.53	−17.49	93.68	20	+0.63	−4.98	−23.64	82.55					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1901 MARCH 29. ZONE 227. CLAMP EAST.

KING, OBSERVER. LAWTON, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.1	1.1	3.3	5.7	7.9	9.9	c	0 5.58	55 2 10.0	4.8	III	49.435	7 59 37.12	−16 13 11.40	−16 2271
2	8.8	50.6	52.7	54.8	57.0	59.2	c	5 54.86	56 50 10.0	4.5	III	49.500	8 5 26.42	[18 1 17.37]	17 2367
3	9.3	58.0	0.5	2.4	4.8	7.0	c	7 2.54	52 58 10.0	5.0	V B	44.735	8 6 33.95	14 4 23.24	13 2425
4	......	45.8	48.0	50.0	51.9	53.9	e	7 20.32	52 58 "	"	VII	47.255	8 6 51.73	14 8 26.25	14 2404
5	......	44.1	46.4	48.4	50.6	52.5	c	19 48.40	55 36 10.0	4.6	III	46.240	8 19 19.81	16 46 9.90	16 2427
6	......	37.0	39.2	41.5	43.6	45.8	(c)	20 41.42	54 46 10.0	4.1	(III)	49.495	8 20 12.79	15 57 9.65	15 2421
7	......	49.5	51.3	53.2	55.2	57.5	(a)	24 23.28	55 54 10.0	4.6	(I)	(44).880	8 23 54.66	17 3 42.59	16 2464
8	......	41.5	43.5	45.8	47.8	50.0	(c)	24 45.72	54 18		....		8 24 17.05	15 28 49	15 2453
9	......	23.2	25.8	27.6	29.6	31.6	e	26 57.77	54 22 10.0	4.5	VII	47.535	8 26 29.09	15 32 33.42	15 2476
10	......	10.8	13.0	15.2	17.3	19.6	c	29 15.18	55 28 10.0	4.2	III	49.945	8 28 46.52	−16 39 19.64	−16 2504
11	9.0	56.3	58.5	0.7	2.8	5.1	c	40 0.68	55 24 10.0	4.5	III	49.275	8 39 31.93	−16 35 5.95	−16 2569
12	8.6	1.4	3.5	5.6	7.9	10.1	c	54 5.70	54 56 10.0	5.5	III	50.295	8 53 36.82	16 7 23.73	15 2654
13	8.9	10.8	13.0	15.1	17.2	19.4	c	12 15.10	54 42 10.0	5.5	III B	42.050	9 11 46.09	15 47 30.26	15 2749
14	8.6	2.9	5.1	7.3	9.5	15.8	c_1 d_1	13 7.27	54 42 "	"	III A	42.095	9 12 38.25	−15 53 59.44	−15 2752

Reduction Elements. Zone 227.

1901.	OBSERVED. *c*	OBSERVED. *b*	OBSERVED. *a*	ADOPTED. *c*	ADOPTED. *b*	ADOPTED. *a*
	s	s	s	s	s	s
March 29.3....	+0.097	−0.175	+0.336	+0.109	−0.178	+0.360
29.4....	+0.121	−0.182	+0.385			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		e Navis		20 Navis		Lalande 16304		19 Hydrae		Piazzi IX. 13		θ Pyxidis Nautilis	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		61 26 8.10		54 18 7.75		51 8 7.45		47 2 7.45		58 10 7.30		64 22 7.50	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	46.970	5 23.77		6 13.56	45.180	4 49.06	44.275	4 31.19	46.585	5 15.71	45.425	4 53.77
II	Red. to Mer......	.960	4.78		4.86	.170	4.89	.230	4.93	.535	4.82	.385	4.75
VI	Inclination	.825		49.510	1.88	.005		.040		.375		.260	
VII	Refraction.......	.775	1 47.6	.445	1 21.8	44.935	1 12.9	.020	1 3.3	.355	1 35.0	.200	2 2.7

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
e Navis............	7 53 1.67	11	+0.37	−24.08	61 33 24.2	4.2
20 Navis............	8 9 12.74	11	+0.31	−24.12	54 25 49.8	4.6
Lalande 16304.....	8 14 7.89	11	+0.28	−24.09	51 14 14.3	4.7
19 Hydrae..........	9 4 17.68	11	+0.25	−24.14	47 7 46.9	5.3
Piazzi IX.13	9 7 52.73	11	+0.34	−24.09	58 17 2.8	5.2
θ Pyxidis Nautilis...	9 17 32.73	11	+0.40	−24.19	64 29 8.7	5.7

h		s
8.090	..........*dt*....................	−24.097
	Hourly rate	− 0.0401
		° ′ ″
	Adopted Equator Point..........	38 56 4.95

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 55	29.74	43.8	42.7
8 35	29.745	42.3	41.6
9 16	29.75	41.2	40.2

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+0.31	−4.68	−32.01	84.00	6	+0.31	−4.83	−33.85	83.29	11	+0.32	−4.95	−35.60	85.37
2	0.33	4.67	33.03	89.90	7	0.32	4.83	34.44	86.81	12	0.31	5.06	36.54	84.01
3	0.30	4.79	32.12	77.70	8	0.31	4.87	.....	.....	13	0.31	5.18	37.65	83.10
4	0.30	4.79	32.18	77.89	9	0.31	4.88	34.29	82.06	14	+0.31	−5.19	−37.71	83.44
5	+0.32	−4.80	−33.98	85.85	10	+0.32	−4.87	−34.77	85.53					

a = Instrumental corrections.
A = *α* to 1900.0
D = Z. D. S. to 1900.0

1901 APRIL 1. ZONE 228. CLAMP EAST.

KING, OBSERVER. LAWTON, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		*α* 1900.0	*δ* 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	8.9	2.8	4.9	7.2	9.4	11.5	(c)	0 7.16	55 2 10.0	3.3	III	49.545	7 59 37.15	−16 13 10.92	−16 2271
2	9.1	52.1	54.3	56.5	58.9	1.1	(c)	5 56.58	56 50 10.0	4.2	(III)	49.365	8 5 26.59	18 1 12.66	17 2367
3	9.5	0.1	2.1	4.1	6.3	8.4	(c)	7 4.20	52 58 10.0	3.7	(III) B	44.795	8 6 34.06	14 4 20.38	13 2425
4	8.5	17.6	19.8	21.9	24.0	26.2	c	7 21.90	52 58 "	"	V	47.360	8 6 51.76	14 8 24.51	14 2404
5	9.6	45.7	47.8	50.1	52.2	54.5	(c)	19 50.06	55 36 10.0	3.8	(III)	46.295	8 19 19.91	16 46 8.61	16 2427
6	9.3	38.7	40.8	43.0	45.2	47.5	(c)	20 43.04	54 46 10.0	4.6	(III)	49.580	8 20 12.85	15 57 9.65	15 2421
7	.....	51.0	53.0	55.0	57.0	59.0	a	24 24.94	55 54 10.0	4.2	(I)	45.090	8 23 54.77	17 3 44.49	16 2464
8	......	......	32.8	34.8	36.7	38.9	a	26 4.77	55 54 10.0	5.0	(I)	44.705	8 25 34.59	17 3 37.36	16 2479
9	9.5	10.4	12.4	14.8	16.9	18.9	(c)	26 14.68	53 52 10.0	2.3	(III)	45.900	8 25 44.43	15 1 54.98	14 2548
10	9.2	55.0	57.2	59.4	1.5	3.6	(c)	26 59.34	54 22 10.0	3.9	(III)	47.805	8 26 29.10	−15 32 33.62	−15 2476
11	9.8	43.0	45.0	46.9	48.9	51.0	(c)	28 46.96	55 28 10.0	4.3	(III)	50.125	8 28 16.75	−16 39 21.26	....
12	9.4	57.9	59.9	2.1	4.4	6.7	(c)	40 2.20	55 24 11.5	5.8	(III)	49.270	8 39 31.89	16 35 5.29	−16 2569
13	9.7	2.9	5.0	7.2	9.3	11.5	(c)	54 7.18	54 56 11.5	6.6	(III)	50.240	8 53 36.77	−16 7 22.02	−15 2654

Reduction Elements. Zone 228.

	OBSERVED.			ADOPTED.		
1901.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 1.3....	+0. 124	−0. 194	+0. 389	+0. 116	−0. 190	+0. 396
1.4....	+0. 108	−0. 185	+0. 404			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

CIRCLE READING.	*e* Navis		20 Navis		Lalande 16304		19 Hydrae		Piazzi IX. 13	
	° ′ ″ 61 26 8. 10		° ′ ″ 54 18 6. 15		° ′ ″ 51 8 7. 90		° ′ ″ 47 2 9. 15		° ′ ″ 58 ′10 6. 75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	47. 075	5 25. 69	49. 950	6 20. 21	45. 175	4 48. 98	44. 215	4 30. 64	46. 780	5 19. 85
II Red. to Mer......	. 035	4. 78	. 900	4. 86	. 120	4. 89	. 175	4. 93	. 735	4. 82
VI Inclination	46. 925		. 725		. 010		. 050		. 620	
VII Refraction	. 895	1 46. 1	. 725	1 20. 6	44. 965	1 11. 9	. 010	1 2. 4	. 575	1 ′33. 5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
e Navis.............	7 53 3. 25	11	+0. 40	−25. 76	61 33 24. 7	4. 6
20 Navis.............	8 9 14. 26	10	+0. 34	−25. 72	54 25 51. 8	6. 5
Lalande 16304.....	8 14 9. 46	11	+0. 31	−25. 75	51 14 13. 7	4. 1
19 Hydrae...........	9 4 19. 22	11	+0. 28	−25. 76	47 7 47. 1	5. 5
Piazzi IX. 13	9 7 54. 33	11	+0. 37	−25. 78	58 17 4. 9	7. 1

h 8. 090............*dt* .... −25. 743 s

Hourly rate .... − 0. 0267

Adopted Equator Point.......... 38° 56′ 5. 56″

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
7 49	29. 80	50. 8	51. 0
8 40	29. 795	49. 2	49. 5
9 30	29. 825	48. 5	48. 3

Note. Generally cloudy throughout the zone.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+0. 35	−4. 62	−32. 02	82. 77	6	+0. 34	−4. 78	−33. 88	82. 06	11	+0. 35	−4. 81	−34. 77	84. 25
2	0. 36	4. 61	33. 05	88. 57	7	0. 35	4. 77	34. 49	85. 53	12	0. 35	4. 90	35. 68	84. 09
3	0. 33	4. 73	32. 13	76. 56	8	0. 35	4. 78	34. 64	85. 53	13	+0. 35	−5. 00	−36. 62	82. 75
4	0. 33	4. 73	32. 19	76. 74	9	0. 34	4. 84	34. 14	79. 36					
5	+0. 35	−4. 75	−34. 02	84. 57	10	+0. 34	−4. 83	−34. 33	80. 87					

a = Instrumental corrections.
A = *α* to 1900.0.
D = Z. D. S. to 1900.0.

1901 APRIL 11. ZONE 229. CLAMP EAST.

KING, OBSERVER. LAWTON, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	......	59. 1	1. 4	3. 7	5. 8	8. 1	c	6 3. 62	56 50 10. 0	2. 6	III	49. 470	8 5 26. 31	−18 1 12. 01	−17 2367
2	......	44. 9	47. 3	49. 0	50. 9	53. 0	e	7 19. 43	52 58 10. 0	3. 5	VII B	45. 280	8 6 42. 04	14 4 32. 32	13 2426
3	......	24. 6	26. 8	29. 0	31. 1	33. 2	(c)	7 28. 94	52 58 “	“	V	47. 380	8 6 51. 55	14 8 24. 55	14 2404
4	8. 8	53. 0	55. 1	57. 3	59. 5	1. 6	c	19 57. 30	55 36 10. 0	2. 8	III	46. 430	8 19 19. 90	16 46 10. 32	16 2427
5	8. 0	46. 0	48. 1	50. 3	52. 5	54. 5	c	20 50. 28	54 46 10. 0	3. 5	III	49. 650	8 20 12. 84	15 57 10. 08	15 2421
6	8. 6	58. 3	0. 1	2. 0	4. 1	6. 4	a	24 32. 12	55 54 10. 0	3. 2	I	45. 190	8 23 54. 69	17 3 45. 49	16 2464
7	......	50. 2	52. 4	54. 6	56. 8	58. 8	c	24 54. 56	54 18 10. 0	4. 4	III	48. 565	8 24 17. 08	15 28 48. 10	15 2453
8	...	38. 1	40. 1	42. 0	44. 0	46. 2	a	26 12. 02	55 54 10. 0	3. 0	I	44. 895	8 25 34. 58	17 3 39. 56	16 2479
9	7. 8	17. 5	19. 8	21. 9	24. 0	26. 2	c	26 21. 88	53 52 10. 0	3. 0	III	45. 870	8 25 44. 37	15 1 54. 42	14 2548
10	8. 3	2. 2	4. 4	6. 5	8. 6	10. 8	c	27 6. 50	54 22 10. 0	3. 8	III	47. 815	8 26 29. 00	−15 32 33. 40	−15 2476

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
11	8.5	19.7	21.8	24.0	26.2	28.3	c	29 24.00	55 28 10.0	3.8	III	50.010	8 28 46.53	−16 39 18.37	−16 2504
12	9.5	17.8	19.8	22.2	24.2	26.4	c	34 22.08	54 34 10.0	3.7	III	47.610	8 33 44.54	15 44 29.38	15 2531
13	8.7	5.1	7.1	9.4	11.6	13.8	c	40 9.40	55 24 10.0	3.1	III	49.500	8 39 31.83	16 35 4.18	16 2569
14	8.4	10.2	12.4	14.6	16.7	18.9	c	54 14.56	54 56 10.0	3.5	III	50.480	8 53 36.88	16 7 23.90	15 2654
15	9.0	19.5	21.8	24.0	26.2	28.3	c	12 23.96	54 42 10.0	3.6	III B	42.260	9 11 46.13	15 47 30.93	15 2749
16	8.6	11.6	13.9	16.1	18.2	20.3	c	13 16.02	54 42 "	"	III A	42.310	9 12 38.18	15 54 0.17	15 2752
17	8.9	7.9	10.0	12.3	14.4	16.6	c	20 12.24	54 46 10.0	2.8	III	45.445	9 19 34.35	15 55 44.88	15 2782
18	8.9	......	26.3	28.6	30.7	32.9	(c)	29 28.54	55 46 10.0	3.2	III	44.840	9 28 50.61	16 55 35.82	16 2824
19	9.0	20.1	22.1	24.4	26.5	28.7	c	30 24.36	53 26 10.0	2.1	III	45.025	9 29 46.36	14 35 32.37	14 2888
20	8.7	19.7	22.1	24.0	25.9	27.8	e	31 54.25	53 26 10.0	2.4	V	48.480	9 31 16.24	−14 36 40.28	−14 2895
21	9.2	59.5	1.7	3.9	6.0	8.4	c	37 3.90	56 16 10.0	2.7	III	45.100	9 36 25.92	−17 25 41.72	−17 2931
22	8.6	57.3	59.5	1.7	3.8	6.0	c	1 1.66	55 18 10.0	3.1	III	46.365	10 0 23.47	16 28 2.48	16 2957
23	8.9	1.3	3.4	5.7	7.9	10.0	c	8 5.66	54 26 10.0	4.0	III	45.040	10 7 27.41	15 35 34.87	15 3001[2]
24	9.0	44.5	46.6	48.7	50.9	53.1	c	18 48.76	55 10 10.0	4.4	III	47.175	10 18 10.44	−16 20 17.88	−16 3038

Reduction Elements. Zone 229.

	OBSERVED.			ADOPTED.		
1901.	c	b	a	c	b	a
	s	s	s	s	s	s
April 11.3....	+0.122	−0.223	+0.246	+0.124	−0.235	+0.260
11.4....	+0.125	−0.225	+0.274			
11.4....		−0.256				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	e Navis		20 Navis		Lalande 16304		19 Hydrae		Piazzi IX. 13		θ Pyxidis Nautilis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	61 26 7.40		54 18 6.95		51 8 6.65		47 2 6.75		58 10 6.95		64 22 6.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq......	47.180	5 26.67		6 14.46	45.370	4 52.15	44.420	4 33.85	46.790	5 19.67	45.560	4 56.77
II | Red. to Mer......	.110	4.78		4.80	.330	4.89	.360	4.93	.745	4.82	.565	4.75
VI | Inclination......	46.935			2.26	.130		.190		.580		.410	
VII | Refraction.......	.910	1 45.1	49.525	1 19.9	.105	1 11.3	.145	1 2.0	.560	1 33.0	.360	2 0.2

	λ Hydrae		22 Sextantis		μ Hydrae	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	50 42 6.90		46 24 7.10		55 10 6.70	
	r	′ ″	r	′ ″	r	′ ″
I | Microm. Eq......	45.630	4 57.38	47.920	5 41.35	44.955	4 43.94
II | Red. to Mer......	.585	4.89	.875	4.94	.890	4.85
VI | Inclination......	.420		.730		.725	
VII | Refraction.......	.390	1 10.9	.670	1 1.0	.650	1 23.4

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
e Navis.............	7 53 10 53	11	+0.26	−33.10	61 33 23.9	3.5
20 Navis.............	8 9 21.54	5	+0.21	−33.05	54 25 48.4	[2.8]
Lalande 16304.....	8 14 16.61	11	+0.18	−32.94	51 14 15.0	5.0
19 Hydrae...........	9 4 26.50	11	+0.16	−33.06	47 7 47.5	5.6
Piazzi IX. 13......	9 8 1.64	11	+0.23	−33.10	58 17 4.4	5.9
θ Pyxidis Nautilis...	9 17 41.54	11	+0.28	−33.07	64 29 8.5	4.3
λ Hydrae...........	10 6 21.01	11	+0.18	−33.05	50 48 20.1	5.1
22 Sextantis.........	10 13 18.01	11	+0.15	−33.06	46 30 54.4	5.4
μ Hydrae...........	10 21 53.53	11	+0.21	−33.08	55 16 18.9	4.6

h		s
9.000............	*dt*....................	−33.055
	Hourly rate..........	− 9.0121
		° ′ ″
	Adopted Equator Point.........	38 56 4.92

CLOCK TIME.	B.	t.	T.
h m	in	°	°
7 56	29.85	56.2	56.0
8 34	29.865	54.5	54.2
8 59	29.88	53.6	53.3
9 33	29.895	52.3	52.2
10 14	29.915	51.6	51.1

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+0.22	−4.49	−34.83	87.84	9	+0.20	−4.66	−34.53	78.78	17	+0.21	−5.04	−38.87	81.83
2	0.20	4.55	32.44	75.94	10	0.21	4.66	34.74	80.28	18	0.22	5.09	39.65	84.97
3	0.20	4.55	32.47	76.13	11	0.22	4.64	35.25	83.66	19	0.20	5.14	39.14	78.00
4	0.22	4.57	34.42	83.94	12	0.21	4.70	35.44	80.93	20	0.20	5.15	39.21	78.06
5	0.21	4.60	34.28	81.45	13	0.21	4.73	36.16	80.50	21	0.22	5.14	40.16	86.63
6	0.22	4.60	34.93	84.90	14	0.21	4.84	37.16	82.23	22	0.21	5.33	40.94	83.71
7	0.21	4.64	34.53	80.08	15	0.21	4.98	38.35	81.36	23	0.21	5.39	40.98	81.10
8	+0.22	−4.61	−35.08	84.90	16	+0.21	−4.99	−38.43	81.69	24	+0.21	−5.46	−41.43	83.42

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1901 APRIL 17. ZONE 230. CLAMP EAST.

KING, OBSERVER. LAWTON, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.2	37.3	39.4	41.6	43.7	45.9	c	34 41.58	54 16 10.0	2.2	V	44.840	10 33 59.23	−15 25 29.23	−15 3096
2	9.1	32.2	34.4	36.5	38.7	40.8	c	46 36.52	54 56 10.0	2.0	III	44.515	10 45 54.09	16 5 23.18	15 3140
3	9.2	20.0	22.3	24.4	26.6	28.8	c	25 24.42	56 42 10.0	0.9	III	45.305	11 24 41.71	17 51 43.55	17 3396
4	8.2	20.0	22.2	24.4	26.5	28.7	c	34 24.36	53 20 10.0	2.0	III	49.200	11 33 41.60	14 30 49.32	14 3370
5	9.5	27.1	29.3	31.7	33.9	36.0	c	42 31.60	57 12 10.0	2.9	III	44.125	11 41 48.78	18 21 24.07	18 3239
6	8.7	17.4	19.6	21.9	24.0	26.2	c	2 21.82	56 16 10.0	2.7	III	43.895	12 1 38.88	17 25 17.43	17 3553
7	9.4	25.1	27.3	29.5	31.6	33.8	c	7 29.46	55 28 10.0	2.5	III	44.990	12 6 46.48	16 37 36.15	16 3409
8	9.5	4.4	6.3	8.9	10.7	13.0	c	19 8.66	56 8 10.0	2.5	III	46.195	12 18 25.62	17 18 1.98	17 3612
9	9.7	.....	.....	.....	.....	.....	....	....	57 0 10.0	2.4	III	(49).840	12 25 8	18 11 15.15	17 3638
10	8.8	57.2	59.4	1.6	3.7	6.0	c	35 1.58	55 24 10.0	2.5	III	46.740	12 34 18.46	−16 34 11.20	−16 3512
11	9.1	51.8	54.0	56.2	58.2	0.5	c	36 56.14	53 44 10.0	2.4	III	47.610	12 36 13.03	−14 54 23.11	−14 3555
12	9.7	11.2	13.5	......	17.8	20.0	c	43 15.63	55 4 10.0	2.3	III	44.075	12 42 32.47	16 13 19.55	15 3534
13	9.0	25.2	27.3	29.5	31.5	33.8	c	46 29.46	56 8 10.0	2.2	III	48.790	12 45 46.27	17 18 53.57	17 3718
14	9.3	8.8	10.9	13.0	15.2	17.3	c	47 13.04	53 58 10.0	2.8	III	49.030	12 46 29.87	15 8 51.97	14 3594
15	8.2	34.9	37.0	39.3	41.4	43.6	c	48 39.24	56 46 10.0	2.3	III	50.555	12 47 56.03	[17 57 29.75]	17 3723
16	8.0	8.6	10.8	13.0	15.1	17.4	c	50 12.98	56 38 10.0	1.5	III	48.035	12 49 29.76	17 48 40.66	17 3730
17	8.8	34.0	36.2	38.5	40.7	42.8	c	51 38.44	55 58 10.0	3.2	III	46.525	12 50 55.23	17 8 10.45	16 3566
18	8.9	30.2	32.4	34.6	36.8	38.8	c	53 34.56	56 26 10.0	1.3	III	47.780	12 52 51.33	17 36 35.27	17 3742
19	8.3	39.4	41.6	43.8	46.0	48.1	c	56 43.78	54 6 10.0	2.2	III	43.920	12 56 0.58	15 15 14.72	15 3578
20	9.8	0.1	2.3	4.5	6.6	8.8	c	2 4.46	54 44 10.0	2.2	III	49.035	13 1 21.22	−15 54 55.23	−15 3597
21	......	28.2	30.3	32.5	34.7	36.9	c	9 32.52	54 52 10.0	1.6	III	44.530	13 8 49.25	−16 1 29.48	−15 3621
22	8.8	27.9	30.1	32.4	34.4	36.7	c	29 32.30	55 24 10.0	2.2	III	44.885	13 28 48.94	16 33 40.12	16 3696
23	8.9	57.3	59.4	1.7	3.7	6.0	c	30 1.62	55 4 10.0	3.5	III	45.980	13 29 18.26	16 14 0.82	15 3696
24	9.0	33.0	35.0	36.9	38.9	41.0	a	38 6.52	53 22 10.0	2.4	I	47.015	13 37 23.17	14 32 14.21	14 3781
25	8.3	10.3	12.4	14.7	16.9	19.0	c	38 14.66	53 22 "	"	III	45.550	13 37 31.31	14 31 47.78	14 3783
26	9.3	54.4	56.6	58.8	0.9	3.0	c	54 58.74	53 42 10.0	2.9	III	46.390	13 54 15.34	14 52 6.85	14 3845
27	6.5	26.0	28.2	30.5	32.7	34.8	c	0 30.44	54 42 10.0	3.0	III	43.960	13 59 47.00	15 51 23.90	15 3805
28	8.8	42.4	44.5	46.8	48.9	51.1	c	2 46.74	56 20 10.0	2.6	III	48.280	14 2 3.25	17 30 52.13	17 4010
29	5.2	1.7	3.9	6.1	8.3	10.4	c	6 6.08	54 40 10.0	2.7	III	45.100	14 5 22.63	15 49 46.17	15 3817
30	......	24.5	26.7	29.0	31.1	33.4	c	7 28.94	56 24 10.0	3.0	III	45.210	14 6 45.44	−17 33 54.22	−17 4027
31	9.0	38.4	40.6	42.8	44.9	47.2	c	9 42.78	56 42 10.0	1.7	III	47.035	14 8 59.26	−17 52 29.84	−17 4038
32	6.1	45.6	47.6	49.9	52.1	54.4	c	13 49.92	57 6 10.0	1.8	III	42.795	14 13 6.39	18 15 10.39	18 3789
33	9.1	19.9	21.8	24.0	28.3	29.9	c_3 d_2	14 19.74	54 38 10.0	4.0	V	43.740	14 13 36.28	15 47 23.05	15 3844
34	9.0	57.2	59.5	1.6	3.8	6.0	c	18 1.62	56 26 10.0	1.7	III	45.800	14 17 18.09	17 36 6.24	17 4076
35	8.8	18.0	20.2	22.4	26.8	28.3	c_3 d_2	18 18.05	56 26 "	"	V	44.825	14 17 34.52	17 35 49.07	17 4078
36	8.8	40.7	42.9	45.1	47.3	49.5	c	19 45.10	56 28 10.0	2.7	III	47.765	14 19 1.56	17 38 44.78	17 4083
37	9.1	49.6	51.8	54.0	56.2	58.3	c	26 53.98	57 6 10.0	2.7	III	44.200	14 26 10.42	18 15 39.45	18 3843
38	8.9	42.4	44.7	46.5	48.3	50.4	e	30 16.88	52 56 10.0	1.9	VII	44.400	14 29 33.43	14 5 32.90	−13 3927

Reduction Elements. Zone 230.

	OBSERVED.			ADOPTED.		
1901.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 17.4....	+0.116	−0.264	+0.255	+0.113	−0.268	+0.250
17.5...	+0.110	−0.272	+0.245			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		μ Hydrae		Bradley 1462		44 Hydrae		δ Crateris		γ Crateris		κ Crateris	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		55 10 6.15		45 58 6.20		62 4 6.35		53 4 5.75		55 58 5.75		50 38 6.20	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.		4 44.13	45.935	5 2.98	44.500	4 36.46	47.550	5 34.62	46.670	5 17.33	48.450	5 51.58
II	Red. to Mer.		4.85	.875	4.94	.475	4.77	.520	4.87	.635	4.84	.395	4.89
VI	Inclination	44.865	1.88	.700		.365		.375		.450		.260	
VII	Refraction	.765	1 22.9	.680	59.8	.320	1 48.7	.345	1 17.1	.430	1 25.8	.225	1 10.7

		γ Corvi		Piazzi XII. 54		β Corvi		Lalande 24277		53 Virginis		γ Hydrae	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		55 50 6.65		51 50 5.95		61 40 6.60		58 52 6.25		54 30 5.90		61 28 7.00	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.		4 19.00		5 58.25	47.060	5 24.60	47.970	5 42.15	44.830	4 42.65	46.855	5 21.12
II	Red. to Mer.		4.84		4.88	.010	4.77	.905	4.81	.825	4.85	.810	4.78
VI	Inclination	43.520	1.88	48.700	1.88	46.830		.770		.665		.675	
VII	Refraction	.490	1 25.6	.660	1 14.0	.800	1 47.8	.720	1 36.6	.630	1 21.8	.635	1 47.3

		ι Virginis		Mayer 575		μ Virginis	
		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		44 22 6.75		58 50 6.65		44 4 7.10	
		r	′ ″	r	′ ″	r	′ ″
I	Microm. Ed.	45.350	4 51.71	45.115	4 49.02	45.155	4 48.25
II	Red. to Mer.	.270	4.95	.025	4.81	.130	4.95
VI	Inclination	.150			−1.88	44.955	
VII	Refraction	.075	57.3		1 36.8	.880	56.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
μ Hydrae	10 21 57.39	10	+0.17	−36.97	55 16 19.9	5.3
Bradley 1462	10 26 40.79	11	+0.11	−37.05	46 4 13.9	6.4
44 Hydrae	10 29 57.70	11	+0.23	−37.05	62 10 36.3	5.8
δ Crateris	11 15 3.00	11	+0 16	−37.02	53 11 2.3	6.4
γ Crateris	11 20 35.75	11	+0.18	−37.05	56 4 53.7	6.6
κ Crateris	11 22 49.95	11	+0.14	−37.09	50 45 13.4	6.6
γ Corvi	12 11 22.63	11	+0.18	−37.01	55 55 58.0	5.8
Piazzi XII. 54	12 16 28.83	11	+0.15	−37.07	51 57 25.0	6.0
β Corvi	12 29 51.13	11	+0.22	−37.11	61 47 23.8	6.4
Lalande 24277	12 59 8.04	11	+0.20	−37.14	58 59 29.8	5.7
53 Virginis	13 7 27 40	11	+0.17	−37.12	54 36 15.2	5.0
γ Hydrae	13 14 12.44	11	+0.22	−37.11	61 35 20.2	5.3
ι Virginis	14 11 29.32	11	+0.10	−37.09	44 28 0.7	5.2
Mayer 575	14 29 56.57	11	+0.20	−37.12	58 56 35.4	5.3
μ Virginis	14 38 30.54	11	+0.10	−37.14	44 9 57.1	4.6

h		s
12.500	*dt*	−37.081
	Hourly rate	−0.0263
		° ′ ″
	Adopted Equator Point	38 56 5.76

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
10 24	29.885	54.6	53.1
10 48	29.89	53.7	52.0
11 31	29.89	52.3	51.0
12 30	29.88	50.6	49.0
13 16	29.885	49.2	47.2
13 55	29.89	48.3	46.5
14 33	29.89	47.2	45.9

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+0.17	−5.49	−41.74	80.30	14	+0.16	−6.24	−38.02	80.16	27	+0.17	−6.48	−31.41	82.61
2	0.17	5.57	42.02	82.37	15	0.18	6.30	38.09	89.02	28	0.18	6.54	31.10	87.89
3	0.18	5.84	42.08	88.20	16	0.18	6.31	37.97	88.54	29	0.17	6.49	30.80	82.55
4	0.16	5.87	41.34	77.96	17	0.18	6.30	37.84	86.31	30	0.18	6.55	30.56	88.08
5	0.19	5.95	41.70	89.98	18	0.18	6.32	37.70	87.88	31	0.18	6.57	30.29	89.13
6	0.18	6.06	40.80	86.94	19	0.17	6.28	37.36	80.55	32	0.19	6.59	29.78	90.43
7	0.17	6.08	40.47	84.42	20	0.17	6.31	36.96	82.56	33	0.17	6.50	29.88	82.46
8	0.18	6.15	39.96	86.63	21	0.17	6.34	36.37	82.93	34	0.18	6.57	29.33	88.24
9	....	....	39.65	89.64	22	0.17	6.42	34.59	84.68	35	0.18	6.57	29.29	88.22
10	0.17	6.21	38.95	84.39	23	0.17	6.42	34.54	83.68	36	0.18	6.58	29.11	88.39
11	0.16	6.19	38.69	79.40	24	0.16	6.39	33.76	78.65	37	0.19	6.61	28.19	90.50
12	0.17	6.24	38.38	83.37	25	0.16	6.39	33.75	78.63	38	+0.16	−6.47	−28.09	77.56
13	+0.18	−6.28	−38.20	86.85	26	+0.16	−6.44	−32.05	79.65					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1901 APRIL 29. ZONE 231. CLAMP EAST.

KING, OBSERVER. LAWTON, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.5	14.0	16.5	18.3	20.2	22.2	e	25 48.03	57 2 10.0 0.2	V	43.675	12 25 8.41	−18 11 12.82	−17 3638
2	8.4	34.0	36.2	38.5	40.7	42.7	c	44 38.42	54 28 10.0 1.6	III	49.420	12 43 58.74	15 38 55.85	15 3540
3	8.2	40.5	42.6	44.8	47.0	49.2	c	46 44.82	55 12 10.0 2.2	III	47.430	12 46 5.12	16 22 20.17	16 3548
4	9.2	4.0	6.0	8.1	10.3	12.5	c	48 8.18	53 0 10.0 0.3	III	43.715	12 47 28.50	14 9 1.99	13 3611
5	8.5	8.4	10.5	12.8	14.9	17.0	c	52 12.72	53 24 10.0 0.7	III	46.845	12 51 33.02	14 34 3.58	14 3613
6	9.1	17.0	19.1	21.3	23.4	25.7	c	0 21.30	53 48 10.0 2.2	V	45.390	12 59 41.56	14 57 39.59	14 3636
7	8.9	11.9	13.6	15.7	17.6	19.9	a	15 45.54	55 0 10.0 0.4	I	48.545	13 15 5.72	16 10 40.69	15 3644
8	9.0	55.6	57.9	0.0	2.1	4.2	c	26 59.96	53 36 10.0 0.3	III	45.730	13 26 20.13	14 45 45.38	14 3733
9	......	6.5	8.6	10.9	12.9	15.0	c	28 10.78	53 42 10.0 2.0	III	43.145	13 27 30.94	14 50 57.0[illegible]	14 3739
10	9.3	49.9	52.1	54.3	56.4	58.6	c	34 54.26	54 48 10.0 0.8	III	43.690	13 34 14.38	−15 57 10.66	−15 3712
11	8.0	53.8	56.0	58.4	0.5	2.7	c	36 58.28	56 54 10.0 1.5	III	42.340	13 36 18.34	−18 2 51.75	−17 3907
12	8.9	23.5	25.7	27.8	30.0	32.2	c	39 27.84	54 50 10.0 0.7	III	45.410	13 38 47.94	15 59 44.19	15 3729
13	9.4	4.7	6.9	9.2	11.2	13.5	c	42 9.10	56 24 10.0 1.7	III	45.045	13 41 29.16	17 33 42.73	17 3929
14	9.0	......	43.0	44.9	46.7	48.8	e	45 15.19	53 16 10.0 29.7	VII	42.950	13 44 35.31	14 24 55.51	14 3811
15	8.8	26.5	28.9	30.9	32.7	34.7	e	53 0.76	55 42 10.0 0.2	VII	42.765	13 52 20.80	16 51 0.08	16 3771
16	8.2	40.8	42.9	45.0	47.3	49.5	c	54 45.10	56 12 10.0 0.8	III	43.405	13 54 5.12	17 21 11.58	17 3972
17	8.7	44.6	46.8	49.0	51.3	53.4	c	57 49.02	54 14 10.0 0.2	III	47.985	13 57 9.07	15 24 33.63	15 3792
18	8.8	12.2	14.0	16.1	18.0	20.2	a	59 45.97	55 28 10.0 0.2	I	47.720	13 59 6.00	16 38 30.73	16 3791
19	8.7	44.4	46.4	48.6	50.8	52.9	c	59 48.62	55 22 10.0 0.3	III	46.195	13 59 8.65	16 32 2.91	16 3792
20	8.4	18.5	20.6	22.9	25.0	27.3	c	1 22.86	55 52 10.0 1.8	III	47.855	14 0 42.88	−17 2 37.24	−16 3798
21	7.7	40.2	42.3	44.6	46.8	48.9	c	1 44.56	55 52 " "	III B	45.695	14 1 4.58	−16 58 42.33	−16 3802
22	9.5	48.3	50.0	52.0	54.0	56.1	a	7 21.69	53 42 10.0 1.7	I	45.795	14 6 41.74	14 51 50.26	14 3897
23	9.0	12.2	14.1	16.1	18.1	20.2	a	7 45.82	54 14 10.0 0.3	I	46.125	14 7 5.85	15 23 57.46	15 3824
24	......	46.9	49.2	51.0	52.9	55.0	e	9 20.90	56 24 10.0 1.3	V	45.275	14 8 40.88	[17 33 51.52]	17 4036
25	.....	7.8	10.0	12.2	14.3	16.4	c	12 12.14	56 58 10.0 1.5	(I)	43.595	14 11 32.10	18 7 18.47	17 4053
26	......	25.5	27.6	30.0	32.0	34.3	c	12 29.88	56 52 10.0 0.3	III	44.640	14 11 49.84	18 1 39.36	17 4056
27	9.8	14.9	16.8	19.1	21.3	23.6	c	14 19.14	54 8 10.0 2.0	III	43.500	14 13 39.17	15 17 10.11	15 3846
28	9.0	22.3	24.4	26.8	28.9	30.9	c	16 26.66	57 10 10.0 0.3	III	50.030	14 15 46.61	18 21 24.32	18 3800
29	8.8	59.8	2.0	4.1	6.3	8.4	c	17 4.12	57 10 " "	III	46.935	14 16 24.06	18 20 25.00	18 3804
30	9.2	23.5	25.6	27.8	30.0	32.2	c	22 27.82	53 42 10.0 1.3	III	43.350	14 21 47.85	−14 51 6.69	−14 3958
31	8.8	35.3	37.4	39.7	41.8	43.9	c	23 39.62	54 42 10.0 1.5	III	44.460	14 22 59.62	−15 51 31.15	−15 3878
32	9.3	34.3	36.4	38.6	40.8	42.8	c	25 38.58	53 0 10.0 1.0	III	44.830	14 24 58.62	14 9 33.40	13 3912
33	......	35.8	37.8	40.0	42.1	44.2	c	28 39.98	53 24 10.0 0.8	III	45.635	14 28 0.01	14 33 50.21	14 3978
34	......	50.8	52.5	54.4	56.5	58.6	a	5 24.33	54 46 10.0 1.2	(I)(A)	(44).400	15 4 44.29	15 58 48.68	15 4041
35	......	20.4	22.3	24.5	26.7	29.0	(c)	5 24.58	54 40 10.0 0.7	(III)A	(47).240	15 4 44.54	15 53 44.42	15 4042
36	8.9	35.1	37.2	39.4	41.6	43.7	c	6 39.40	53 10 10.0 0.0	III	48.720	15 5 59.41	14 20 53.34	14 4139
37	8.8	31.2	33.5	35.4	37.4	39.4	e	7 5.24	56 38 10.0 29.7	V	48.540	15 6 25.13	17 49 1.97	17 4272
38	9.2	42.7	44.9	47.1	49.3	51.5	c	8 47.10	56 56 10.0 29.7	III	47.730	15 8 6.97	18 6 46.16	17 4281
39	8.7	9.5	11.6	13.8	16.0	18.2	c	10 13.82	53 38 10.0 29.5	III	42.410	15 9 33.82	14 46 53.77	14 4155
40	8.8	30.5	33.0	34.8	36.6	38.6	e	13 5.02	53 38 10.0 29.5	VII	45.550	15 12 25.02	−14 47 57.24	−14 4168
41	9.5	0.8	3.0	5.3	7.4	9.7	c	21 5.24	57 4 10.0 1.1	III	45.900	15 20 25.13	−18 14 13.84	−18 4063
42	9.2	57.1	59.0	1.0	3.0	5.3	a	22 31.21	57 4 " "	I	46.215	15 21 51.10	18 14 18.36	18 4067
43	8.7	57.8	0.0	2.0	4.2	6.4	c	25 2.08	53 18 10.0 1.3	V	46.265	15 24 22.10	14 28 11.16	14 4218
44	9.1	23.5	25.7	27.9	30.1	32.3	c	34 27.90	56 50 10.0 0.6	III	42.385	15 33 47.79	17 59 7.25	17 4393
45	9.3	45.5	47.5	49.7	52.0	54.2	c	39 49.78	56 14 10.0 1.3	V	42.490	15 39 9.70	17 23 9.99	17 4413
46	6.4	18.5	20.6	22.9	25.0	27.2	c	55 22.84	55 4 10.0 0.0	VI	46.220	15 54 42.85	16 14 20.40	16 4196
47	9.1	53.3	55.4	57.6	59.8	2.0	c	14 57.62	56 6 10.0 1.2	III	42.075	16 14 17.60	−17 15 5.94	−17 4542

Reduction Elements. Zone 231.

	OBSERVED.			ADOPTED.		
1901.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
April 29.4....	+0.124	−0.391	+0.184	+0.104	−0.376	+0.170
29.5....	+0.084	−0.362	+0.157			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	δ Corvi		β Corvi		χ Virginis		γ Hydrae		α Virginis		72 Virginis	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	54 48 5.75		61 40 5.75		46 18 6.10		61 28 6.00		49 28 6.30		44 48 5.75	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′	r	′ ″
I Microm. Eq.	45.085	4 48.92	47.335	5 29.67	43.495	4 16.77	47.230	5 27.75		5 45.40	45.305	4 51.64
II Red. to Mer.	.045	4.85	.300	4.77	.465	4.94	.185	4.78	48.145	4.92	.245	4.95
VI Inclination		−1.88	.085		.330		46.975		47.965	0.75	.070	−0.75
VII Refraction		1 20.9	.040	1 45.8	.265	59.8	.970	1 45.0	.920	1 6.9		56.8

	κ Virginis		2 Librae		Mayer 575		β Librae		32 Librae		37 Librae	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	48 38 5.50		50 6 6.90*		58 50 5.35		47 52 5.65		55 12 5.65		48 34 5.25	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.		5 52.60		4 41.44	45.470	4 54.50	43.075	4 7.96	45.835	5 1.25	44.390	4 33.44
II Red. to Mer.	48.515	4.92		4.90	.435	4.81	.010	4.92	.785	4.85	.330	4.91
VI Inclination	.345	0.75	44.685	1.88	.270		42.850		.650		.165	
VII Refraction	.285	1 5.1	.665	1 8.5	.250	1 34.7	.780	1 3.4	.560	1 22.3	.145	1 4.8

	β Scorpii pr.		11 Scorpii		ψ Ophiuchi	
	° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	58 22 5.30		51 18 5.55		58 38 5.70	
	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	44.455	4 34.60	47.670	5 36.54	45.145	4 47.46
II Red. to Mer.	.375	4.82	.635	4.89	.065	4.81
VI Inclination	.260		.475		44.890	
VII Refraction	.180	1 33.1	.410	1 11.8	.855	1 34.4

*Microscope v marked "bad."

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
δ Corvi	12 25 20.86	11	+0.03	−33.46	54 54 18.5	6.9
β Corvi	12 29 47.75	11	+0.08	−33.61	61 47 26.0	7.6
χ Virginis	12 34 44.57	11	−0.03	−33.47	46 23 27.6	6.6
γ Hydrae	13 14 8.92	11	+0.08	−33.42	61 35 23.5	7.5
α Virginis	13 20 34.99	11	0.00	−33.32	49 35 4.3	7.0
72 Virginis	13 25 52.26	11	−0.04	−33.40	44 53 58.4	8.8
κ Virginis	14 8 13.43	11	−0.02	−33.43	48 45 8.9	8.4
2 Librae	14 18 42.55	11	−0.01	−33.39	50 12 3.6	[7.2]
Mayer 575	14 29 53.14	11	+0.06	−33.41	58 56 39.4	8.5
β Librae	15 12 17.25	11	−0.02	−33.34	47 57 21.9	8.1
32 Librae	15 23 16.96	11	+0.03	−33.35	55 18 34.1	8.3
37 Librae	15 29 22.45	11	−0.02	−33.26	48 39 48.4	8.4
β Scorpii pr	16 0 17.34	11	+0.06	−33.29	58 28 17.8	7.8
11 Scorpii	16 2 42.99	11	0.00	−33.31	51 24 58.8	7.4
ψ Ophiuchi	16 18 55.15	11	+0.06	−33 34	58.44 32.4	7.4

h 13.384	*dt*	s −33.434
	Hourly rate	+ 0.0505
	Adopted Equator Point	° ′ ″ 38 56 7.76

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
12 30	30.075	63.2	61.4
13 32	30.065	61.3	61.2
14 4	30.065	60.8	60.3
14 31	30.055	60.5	59.2
15 1	30.045	59.4	58.7
15 35	30.040	59.7	60.7
16 15	30.025	57.8	56.6

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	+0.04	−6.18	−40.51	88.00	17	+0.02	−6.56	−32.32	79.46	33	+0.02	−6.61	−28.71	77.20
2	0.03	6.24	38.92	80.06	18	0.03	6.60	32.15	83.17	34	0.03	6.72	23.83	81.33
3	0.03	6.27	38.88	82.21	19	0.03	6.60	32.14	82.83	35	0.03	6.72	23.84	81.08
4	0.01	6.23	38.48	75.81	20	0.04	6.62	31.97	84.43	36	0.02	6.66	23.76	76.61
5	0.02	6.26	38.25	76.95	21	0.04	6.62	31.94	84.23	37	0.04	6.80	23.48	87.08
6	0.02	6.31	37.69	78.06	22	0.02	6.57	31.23	77.94	38	0.04	6.82	23.22	88.03
7	0.03	6.41	36.55	81.62	23	0.02	6.59	31.20	79.48	39	0.02	6.68	23.23	77.78
8	0.02	6.42	35.41	77.50	24	0.04	6.66	31.17	86.14	40	0.02	6.68	22.85	77.81
9	0.02	6.43	35.31	77.74	25	0.04	6.69	30.74	87.99	41	0.05	6.83	21.44	88.33
10	0.03	6.49	34.74	80.97	26	0.04	6.69	30.70	87.68	42	0.05	6.83	21.22	88.31
11	0.04	6.56	34.68	87.57	27	0.02	6.60	30.45	79.19	43	0.02	6.67	21.17	76.78
12	0.03	6.51	34.29	81.12	28	0.05	6.71	30.22	88.80	44	0.04	6.83	19.47	87.44
13	0.04	6.56	34.12	86.00	29	0.05	6.72	30.15	88.75	45	0.04	6.80	18.72	85.56
14	0.02	6.48	33.60	76.59	30	0.02	6.61	29.46	77.99	46	0.02	6.70	16.48	82.15
15	0.03	6.58	32.90	83.79	31	0.03	6.65	29.32	80.92	47	+0.04	−6.77	−13.30	85.60
16	+0.04	−6.61	−32.75	85.39	32	+0.01	−6.59	−29.07	76.08					

a = Instrumental corrections.
$A = \alpha$ to 1900.0
D = Z. D. S. to 1900.0

1901 AUGUST 2. ZONE 232. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.3	20.0	22.0	24.3	26.5	28.7	c	30 24.30	54 58 10.0 27.4	III	44.610	17 29 20.44	−16 7 57.60	−16 4557
2	8.9	12.2	14.0	16.0	18.0	20.1	a	32 45.78	54 26 10.0 28.2	I	47.810	17 31 41.94	15 36 56.75	15 4619
3	7.0	51.5	53.6	55.8	57.9	0.2	c	32 55.80	54 26 " "	III C	48.010	17 31 51.96	15 30 36.23	15 4622
4	9.1	......	34.4	36.3	38.1	40.2	e	37 6.05	56 44 10.0 27.0	VII	43.995	17 36 2.08	17 53 54.58	17 4892
5	9.2	44.1	46.5	48.6	50.7	52.8	c	55 48.54	54 30 10.0 26.8	III	43.890	17 54 44.58	15 39 46.97	15 4764
6	8.8	3.0	5.1	7.2	9.4	11.5	c	0 7.24	53 50 10.0 28.3	III	47.510	17 59 3.29	15 0 56.24	15 4806
7	8.9	32.5	34.6	36.7	39.0	41.2	c	5 36.80	53 0 10.0 28.1	III	48.260	18 4 32.87	14 11 9.47	14 4910
8	8.9	49.8	52.0	54.1	56.2	58.4	c	19 54.10	53 40 10.0 26.4	III	43.550	18 18 50.07	14 49 42.55	14 5033
9	9.2	0.2	2.3	4.5	6.6	8.8	c	21 4.48	55 6 10.0 28.0	III	42.020	18 20 0.40	16 15 17.95	16 4868
10	9.0	18.8	20.7	22.6	24.5	26.7	a	23 52.19	53 4 10.0 27.8	I	42.640	18 22 48.18	−14 13 23.31	−14 5067
11	8.5	23.7	25.7	27.9	30.1	32.4	c	28 27.96	55 46 10.0 27.4	III	41.580	18 27 23.81	−16 55 12.43	−16 4925
12	8.9	31.1	33.0	35.4	37.5	39.6	c	54 35.32	54 26 10.0 27.6	III	41.220	18 53 31.16	15 35 6.62	15 5164
13	8.7	15.1	17.2	19.4	21.6	23.7	c	56 19.40	54 20 10.0 27.2	III	45.640	18 55 15.24	15 30 31.28	15 5178
14	7.0	50.6	52.6	54.8	57.0	59.1	c	56 54.82	54 20 " "	III B	39.815	18 55 50.66	15 25 26.15	15 5185
15	8.2	32.8	35.1	37.0	38.7	41.0	e	57 6.83	56 20 10.0 27.7	VII	42.090	18 56 2.58	17 29 31.99	17 5419
16	9.4	20.4	22.5	24.5	26.8	29.0	c	1 24.64	54 38 10.0 27.8	III	45.250	19 0 20.45	15 48 25.78	15 5225
17	9.0	15.5	17.6	19.7	22.0	24.2	c	3 19.80	56 40 10.0 26.7	III	42.395	19 2 15.53	17 49 36.63	17 5487
18	7.9	53.6	55.5	57.6	59.8	2.0	c	14 57.70	53 10 10.0 28.0	III	44.570	19 13 53.55	14 20 11.31	14 5387
19	9.3	55.1	57.2	59.4	1.5	3.8	c	21 59.40	54 56 10.0 28.1	III	42.780	19 20 55.16	16 5 42.90	16 5310
20	9.5	1.8	3.8	6.0	8.2	......	c	38 6.03	55 18 10.0 26.0	III	42.125	19 37 1.77	−16 27 33.00	−16 5415
21	9.4	18.5	20.6	22.8	25.0	27.2	c	47 22.82	56 22 10.0 27.4	III	45.540	19 46 18.50	−17 32 43.88	−17 5771
22	8.1	30.5	32.6	34.9	36.9	39.2	c	53 34.82	55 4 10.0 28.1	III	44.120	19 52 30.56	16 14 14.11	16 5469
23	9.4	42.0	43.8	46.0	48.3	50.5	c	6 46.12	53 24 10.0 28.1	III	43.030	20 5 41.92	14 33 50.63	14 5663
24	7.5	7.8	9.8	12.0	14.2	16.5	c	12 12.06	54 20 10.0 26.8	III	41.290	20 11 7.82	15 29 19.90	15 5606
25	9.3	3.2	5.4	7.4	9.6	11.7	c	22 7.46	54 30 10.0 27.9	III	40.410	20 21 3.23	−15 39 5.46	−15 5669

Reduction Elements. Zone 232.

1901.	OBSERVED. *c*	*b*	*a*	ADOPTED. *c*	*b*	*a*
	s	s	s	s	s	s
August 2.4....	+0.048	−0.447	+0.121	+0.042	−0.456	+0.143
2.5....	+0.035	−0.466	+0.165			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	ξ Ophiuchi		51 Ophiuchi		o Serpentis		μ Sagittarii		2 H. Scuti		Bradley 2329	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	59 50 3.50		62 42 3.25		51 40 4.15		59 54 3.25		53 28 4.25		49 54 4.30	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	45.330	4 50.83	47.065	5 23.67	43.015	4 9.31	47.180	5 26.06	43.825	4 21.92	42.710	4 0.81
II Red. to Mer.	.285	4.80	.000	4.76	42.990	4.88	.090	4.80	.765	4.87	.690	4.90
VI Inclination	.050		46.735			−1.88	46.910		.550		.425	
VII Refraction	.005	1 34.8	.725	1 46.7		1 9.8	.840	1 35.2	.500	1 14.6	.410	1 5.7

	π Sagittarii		20 Aquilae		υ Sagittarii		β Capricorni		ρ Capricorni		Mayer 842	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	60 0 4.60		46 56 4.65		54 58 3.25		53 56 4.00		56 58 3.35		49 2 4.55	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq.	46.050	5 4.33	46.115	5 6.10	45.650	4 56.92	43.020	4 6.35	45.070	4 48.58	42.970	4 5.81
II Red. to Mer.	45.950	4.80	.080	4.93	.655	4.85	42.965	4.86	.030	4.83	.940	4.91
VI Inclination	.760		45.870		.315		.755			−1.88	.720	
VII Refraction	.730	1 35.7	.790	59.3	.325	1 18.9	.650	1 16.0		1 25.1	.650	1 3.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
ξ Ophiuchi	17 16 4.62	11	−0.07	−56.31	59 56 33.9	11.6
51 Ophiuchi	17 26 22.99	11	−0.04	−56.30	62 49 18.4	10.2
o Serpentis	17 36 51.34	8	−0.13	−56.32	51 45 26.3	11.7
μ Sagittarii	18 8 51.22	11	−0.07	−56.37	60 1 9.3	11.2
2 H. Scuti	18 24 33.86	11	−0.12	−56.34	53 33 45.6	11.7
Bradley 2329	18 30 32.74	11	−0.14	−56.33	49 59 15.7	11.1
π Sagittarii	19 4 53.48	11	−0.07	−56.47	60 6 49.4	10.2
20 Aquilae	19 8 19.10	11	−0.17	−56.38	47 2 15.0	11.6
υ Sagittarii	19 17 4.23	11	−0.11	−56.42	55 4 23.9	11.3
β Capricorni	20 16 27.77	11	−0.12	−56.46	54 1 31.2	11.9
ρ Capricorni	20 24 13.71	11	−0.09	−56.49	57 4 20.0	12.2
Mayer 842	20 27 59.55	11	−0.15	−56.54	49 7 19.1	11.1

h		s
17.898	*dt*	−56.328
	Hourly rate	− 0.0704
		° ′ ″
	Adopted Equator Point	38 56 11.32

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
17 18	29.77	75.4	74.0
18 0	29.76	74.2	73.0
18 32	29.76	73.5	72.4
19 33	29.76	72.9	71.8
20 29	29.76	72.8	71.9

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.11	−7.45	+ 2.20	78.66	10	−0.12	−7.53	+12.33	73.49	19	−0.11	−7.70	+22.10	78.80
2	0.11	7.43	2.75	77.18	11	0.10	7.68	12.62	81.17	20	0.10	7.71	24.73	79.88
3	0.11	7.43	2.81	76.88	12	0.11	7.65	17.50	77.28	21	0.10	7.76	26.12	83.20
4	0.09	7.57	2.97	84.06	13	0.11	7.65	17.82	77.07	22	0.10	7.69	27.19	79.23
5	0.11	7.52	6.96	77.37	14	0.11	7.65	17.93	76.84	23	0.12	7.60	29.31	74.51
6	0.11	7.50	7.87	75.58	15	0.10	7.75	17.64	82.98	24	0.11	7.64	30.05	77.06
7	0.12	7.47	9.05	73.34	16	0.11	7.67	18.65	77.92	25	−0.11	−7.62	+31.48	77.52
8	0.12	7.55	11.50	75.13	17	0.09	7.77	18.69	84.04					
9	−0.10	−7.62	+11.41	79.15	18	−0.12	−7.61	+21.16	73.88					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1901 AUGUST 20. ZONE 233. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°
1	9.1	45.3	47.3	49.6	51.7	53.8	c	24 49.54	55 24 10.0	9.8	III	43.215	20 24 28.94	−16 34 5.32	−16 5613
2	9.2	4.6	6.6	8.7	10.9	13.0	c	25 8.76	55 24 "	"	V A	40.350	20 24 48.16	−16 36 26.86	−16 5615

Reduction Elements. Zone 233.

	OBSERVED.			ADOPTED.		
1901.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
August 20.4....	+0.022	−0.493	+0.115	+0.022	−0.493	+0.115

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		α^2 Capricorni		β Capricorni		Mayer 842		υ Capricorni	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		51 40 10.85		53 56 10.25		49 2 10.55		57 18 10.60	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq......	47.670	5 35.71	42.840	4 2.71	42.780	4 2.15	47.160	5 26.42
II	Red. to Mer......	.590	4.88	.760	4.86	.735	4.91	.125	4.83
VI	Inclination......	.415		.530		.535		46.920	
VII	Refraction.......	.360	1 9.6	.500	1 15.5	.465	1 3.4	.890	1 25.8

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
α^2 Capricorni........	20 12 50.86	11	−0.20	−12.73	51 47 1.0	14.4
β Capricorni........	20 15 44.14	11	−0.18	−12.75	54 1 33.3	14.3
Mayer 842........	20 27 15.85	11	−0.22	−12.75	49 7 21.0	13.9
υ Capricorni........	20 34 42.15	11	−0.16	−12.78	57 25 7.6	13.8

h		s
20.375........	*dt*....................	−12.752
	Hourly rate............	0.0000
		° ′ ″
	Adopted Equator Point...........	38 56 14.10

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
20 4	29.90	78.4	77.5
20 37	29.90	77.8	77.0

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	−0.17	−7.68	+32.19	79.72
2	−0.17	−7.68	+32.23	79.85

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1901 AUGUST 22. ZONE 234. CLAMP EAST.

SKINNER, OBSERVER. KING, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″, ″		r	h m s	° ′ ″	°
1	9.0	31.9	33.9	36.1	38.2	40.4	c	19 36.10	52 32 10.0 11.6	III	42.940	22 19 7.20	−13 42 6.00	−13 6177
2	8.7	36.0	38.0	40.2	42.4	44.6	c	27 40.24	54 16 10.0 10.9	III	42.020	22 27 11.36	15 25 53.27	15 6240
3	8.6	5.8	8.0	9.9	11.8	13.9	e	38 39.93	55 28 10.0 11.2	VII	47.160	22 38 11.08	16 39 39.26	16 6142
4	8.9	54.9	57.0	59.2	1.3	3.5	c	31 59.18	56 36 10.0 11.2	III	46.370	23 31 30.59	17 47 26.69	18 6342
5	......	52.8	55.0	57.0	58.7	0.7	e	54 27.20	53 20 10.0 9.7	III	(42).600	23 53 58.71	−14 30 3.79	−14 6590

Reduction Elements. Zone 234.

	OBSERVED.			ADOPTED.		
1901.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
August 22.5....	+0.028	−0.490	+0.170	+0.028	−0.490	+0.170

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		47 Aquarii		σ Aquarii		υ Aquarii		τ Aquarii		b^3 Aquarii		ω^2 Aquarii	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		60 56 10.95		50 2 9.75		60 2 11.20		52 56 10.50		60 18 11.45		53 56 10.65	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	41.260	3 32.81	41.180	3 31.71	45.290	4 50.12	46.515	5 13.52	41.290	3 33.79	42.010	3 47.79
II	Red. to Mer.	.190	4.78	.130	4.90	.220	4.80	.430	4.87	.240	4.79	41.975	4.86
VI	Inclination	40.990		40.950		.050		.250		.060		.775	
VII	Refraction	.955	1 39.5	.910	1 6.2	44.960	1 36.1	.210	1 13.5	.010	1 37.1	.760	1 16.2

		i^2 Aquarii		2 Ceti	
		° ′ ″		° ′ ″	
CIRCLE READING.		58 18 10.65		56 42 10.55	
		r	′ ″	r	′ ″
I	Microm. Eq.		3 33.88		5 17.23
II	Red. to Mer.		4.82		4.83
VI	Inclination	41.200	1.88	46.550	1.88
VII	Refraction	.110	1 29.7	.540	1 24.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
47 Aquarii	22 16 34.40	11	−0.07	−21.46	61 1 28.0	14.4
σ Aquarii	22 25 50.07	11	−0.16	−21.28	50 6 52.6	14.4
υ Aquarii	22 29 42.49	11	−0.07	−21.45	60 8 42.2	13.5
τ Aquarii	22 44 46.65	11	−0.14	−21.38	53 2 42.4	14.9
b^3 Aquarii	23 28 31.31	11	−0.07	−21.45	60 23 27.1	13.6
ω^2 Aquarii	23 38 0.77	11	−0.13	−21.41	54 1 19.5	15.0
i^2 Aquarii	23 46	..	....	.....	58 23 20.9	14.4
2 Ceti	23 59 5.43	11	−0.10	−21.42	56 48 59.0	13.4

h		s
22.490	*dt*	−21.392
	Hourly rate	− 0.0290
		° ′ ″
	Adopted Equator Point	38 56 14.20

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
22 20	29.95	75.2	74.2
22 47	29.95	75.0	74.0
23 24	29.94	74.5	73.8
0 0	29.94	74.5	73.7

Note.
3. Very close double; mean observed.

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*
	s	s	″	″
1	−0.14	−7.37	+44.70	72.35
2	0.12	7.37	45.27	77.04
3	0.11	7.34	45.97	80.62
4	0.10	7.07	48.06	84.13
5	−0.13	−6.93	+47.81	74.50

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1901 OCTOBER 8. ZONE 235. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.		TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.	
		s	s	s	s	s		m s	° ′ ″	″		r	h m s	° ′ ″	°	
1	9.0	5.2	7.2	9.5	11.7	13.8	c	3 9.48	54 42 10.0	13.2	III	46.180	0 2 43.64	−15 53 23.14	−16	2
2	8.9	45.3	47.4	49.6	51.7	54.0	c	10 49.60	52 30 10.0	12.5	III	46.740	0 10 23.75	13 41 27.41	13	37
3	8.8	13.0	15.2	17.4	19.7	21.8	c	18 17.42	56 2 10.0	13.3	III	47.135	0 17 51.63	17 13 45.43	17	46
4	8.8	5.8	7.8	10.0	12.2	14.5	c	19 10.06	55 50 10.2	14.4	III	42.870	0 18 44.27	17 0 23.56	17	50
5	8.9	46.5	48.5	50.8	53.0	55.0	c	58 50.76	54 48 10.0	12.5	III	44.425	0 58 25.07	15 58 47.97	16	171
6	9.3	6.7	8.7	10.9	13.0	15.3	c	8 10.92	55 56 9.7	12.7	III	44.770	1 7 45.29	17 6 57.56	17	210
7	9.4	54.3	56.4	58.6	0.9	3.1	c	21 58.66	55 52 10.0	12.6	III	44.680	1 21 33.09	17 2 54.94	17	261
8	9.3	24.2	26.3	28.5	30.7	32.9	c	51 28.52	56 26 9.7	12.9	III	46.350	1 51 3.08	17 37 26.74	17	348
9	9.0	46.0	48.2	50.4	52.5	54.6	c	57 50.34	55 38 9.7	12.7	III	44.640	1 57 24.91	16 48 50.70	17	375
10	9.3	2.2	4.3	6.5	8.7	10.9	c	37 6.52	52 44 9.7	12.5	III	48.790	2 36 41.17	−13 55 57.55	−14	507

Reduction Elements. Zone 235.

1901.	OBSERVED. *c*	*b*	*a*	ADOPTED. *c*	*b*	*a*
	s	s	s	s	s	s
October 8.4	+0.054	−0.432	+0.132	+0.052	−0.418	+0.148
8.6	+0.050	−0.403	+0.164			

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

		2 Ceti		ι Ceti		Lalande 628		Piazzi O. 91		θ Ceti		48 Ceti	
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.		56 42 11.20		48 12 12.00		59 42 11.40		63 8 12.50		47 32 12.35		60 58 12.15	
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I	Microm. Eq.	46.540	5 14.36	44.950	4 43.73	44.580	4 36.88	47.940	5 41.54	42.885	4 4.58	43.450	4 14.08
II	Red. to Mer.	.485	4.83	.900	4.92	.540	4.80	.900	4.76	.845	4.92	.350	4.78
VI	Inclination	.285		.690		.330		.730		.660		.110	
VII	Refraction	.270	1 28.7	.650	1 5.2	.310	1 39.7	.680	1 54.9	.635	1 3.7	.095	1 44.9
		50 Ceti		ρ Ceti		σ Ceti		π Ceti		η Eridani			
		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″			
CIRCLE READING.		54 44 11.40		51 34 11.35		54 30 11.25		53 6 11.50		48 8 11.80			
		r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″		
I	Microm. Eq.	44.330	4 31.96	44.390	4 33.77	45.615	4 56.88	45.675	4 57.67	42.740	4 1.29		
II	Red. to Mer.	.295	4.85	.355	4.86	.610	4.85	.640	4.87	.680	4.92		
VI	Inclination	.065			−0.50	.385		.420		.465			
VII	Refraction	.045	1 22.4	.090	1 13.5	.325	1 21.8	.365	1 17.7	.450	1 5.1		

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C.R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
2 Ceti	23 59 2.91	11	−0.06	−18.55	56 48 59.1	11.3
ι Ceti	0 14 45.78	11	−0.12	−18.42	48 18 5.8	10.6
Lalande 628	0 23 45.91	11	--0.03	−18.45	59 48 32.8	11.2
Piazzi O. 91	0 25 48.35	11	0.00	−18.47	63 15 53.7	11.9
θ Ceti	1 19 27.19	11	−0.12	−18.40	47 37 25.5	11.3
48 Ceti	1 25 13.76	11	−0.02	−18.47	61 4 15.9	11.3
50 Ceti	1 31 31.89	11	−0.07	−18.42	54 50 10.6	11.2
ρ Ceti	2 21 32.55	11	−0.09	−18.41	51 40 3.0	12.2
σ Ceti	2 27 46.12	11	−0.07	−18.42	54 36 34.8	11.7
π Ceti	2 39 47.08	11	−0.08	−18.44	53 12 31.7	12.5
η Eridani	2 51 57.90	11	−0.12	−18.37	48 13 23.1	11.2

h		s
1.425	*dt*	−18.438
	Hourly rate	+ 0.0268
		° ′ ″
	Adopted Equator Point	38 56 11.49

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
23 51	30.09	53.2	51.9
0 28	30.08	52.6	51.2
0 59	30.08	52.6	51.3
1 27	30.08	52.4	51.4
2 17	30.08	52.2	51.2
2 49	30.07	52.2	51.2

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.07	−7.30	+46.27	82.30	5	−0.07	−7.17	+44.76	82.62	9	−0.07	−6.94	+40.82	85.24
2	0.09	7.29	46.44	76.00	6	0.06	7.12	44.23	86.19	10	−0.08	−6.86	+36.72	76.70
3	0.06	7.26	45.95	86.54	7	0.06	7.07	43.46	85.97					
4	−0.06	−7.26	+45.94	85.82	8	−0.06	−6.95	+41.35	87.86					

a = Instrumental corrections.
A = α to 1900.0
D = Z. D. S. to 1900.0

1901 OCTOBER 10. ZONE 236. CLAMP EAST.

SKINNER, OBSERVER. LITTELL, ASSISTANT.

NO.	MAG.	TRANSITS.					GR.	MEAN THREAD.	CIRCLE READING.	TELESCOPE MICROMETER.		α 1900.0	δ 1900.0	B. D.
		s	s	s	s	s		m s	° ′ ″ ″		r	h m s	° ′ ″	°
1	9.1	9.1	11.2	......	15.6	17.8	c	47 13.43	54 40 10.3 12.6	III	46.590	2 46 48.80	−15 51 17.11	−16 517
2	8.9	28.7	30.8	32.9	35.0	37.3	c	6 32.94	52 46 9.4 10.3	III	46.010	3 6 8.34	13 56 56.44	14 612
3	8.9	45.1	47.3	49.4	51.5	53.8	c	32 49.42	53 4 10.0 11.5	V	47.220	3 32 24.97	14 15 19.46	14 708
4	9.0	13.0	15.2	17.3	19.4	21.6	c	14 17.30	54 36 10.0 11.4	III	43.930	4 13 53.18	15 46 13.39	15 761
5	9.3	10.0	12.3	14.4	16.6	18.9	c	37 14.44	56 38 10.0 11.3	III	45.370	4 36 50.55	17 48 44.20	17 930
6	9.2	54.6	56.7	58.9	1.2	3.3	c	32 58.94	53 0 10.0 11.5	III	46.175	6 32 35.56	−14 10 28.86	−14 1511^{2}

Reduction Elements. Zone 236.

	OBSERVED.			ADOPTED.		
1901.	*c*	*b*	*a*	*c*	*b*	*a*
	s	s	s	s	s	s
October 10.6....	+0.060	−0.432	+0.057	+0.060	−0.418	+0.057
10.7....		−0.405				

REDUCTION OF THE DECLINATIONS OF THE ZERO STARS.

	π Ceti		τ^3 Eridani		ζ Eridani		τ^4 Eridani		*A* Eridani		Lalande 8205	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	53 6 10.75		62 50 11.10		48 0 11.30		60 56 11.60		49 20 10.40		59 42 10.55	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	45.795	5 0.46	44.250	4 29.79	48.320	5 48.73	45.710	4 58.04	44.980	4 43.62	44.610	4 37.10
II Red. to Mer......	.785	4.87	.160	4.76	.310	4.92	.660	4.78	.890	4.91	.545	4.80
VI Inclination......	.570		43.960		.070		.435		.660		.360	
VII Refraction.......	.530	1 16.4	.910	1 51.6	.050	1 3.8	.370	1 43.2	.640	1 6.9	.290	1 38.2

	53 Eridani		60 Eridani		6 Monocerotis		β Canis Majoris		ξ^2 Canis Majoris		θ Canis Majoris	
	° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″		° ′ ″	
CIRCLE READING.	53 20 10.45		55 12 11.15		49 30 11.50		56 44 10.40		61 42 11.85		50 44 10.90	
	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″	r	′ ″
I Microm. Eq......	43.620	4 18.29	48.070	5 43.17	49.120	6 3.71	45.235	4 49.77	46.570	5 14.38	47.800	5 38.42
II Red. to Mer......	.560	4.87	.005	4.85	.050	4.90	.230	4.83	.515	4.77	.745	4.89
VI Inclination......	.375		47.765		48.885		.015		.260		.555	
VII Refraction.......	.330	1 17.2	.750	1 22.7	.820	1 7.5	44.970	1 27.7	.240	1 46.9	.500	1 10.5

DERIVATION OF THE CLOCK CORRECTION AND EQUATOR POINT.

NAME OF STAR.	MEAN THREAD.	NO. THDS.	INSTR. COR.	CLOCK COR.	REDUCED C. R.	EQUATOR POINT.
	h m s		s	s	° ′ ″	″
π Ceti..............	2 39 46.33	11	−0.15	−17.60	53 12 32.5	13.1
τ^3 Eridani...........	2 58 23.19	11	−0.09	−17.76	62 56 37.2	12.5
ζ Eridani...........	3 11 23.26	11	−0.18	−17.68	48 7 8.8	12.7
τ^4 Eridani...........	3 15 28.35	11	−0.10	−17.75	61 2 57.6	12.1
A Eridani.............	4 10 2.55	11	−0.17	−17.57	49 26 5.8	12.6
Lalande 8205......	4 16 41.14	11	−0.11	−17.66	59 48 30.6	14.4
53 Eridani...........	4 34 0.06	11	−0.15	−17.66	53 25 50.8	12.7
60 Eridani...........	4 46 5.01	11	−0.14	−17.55	55 19 21.9	13.7
6 Monocerotis......	6 13 16.68	11	−0.17	−17.46	49 37 27.6	12.8
β Canis Majoris.....	6 18 40.99	11	−0.13	−17.50	56 50 32.7	14.2
ξ^2 Canis Majoris.....	6 31 14.83	10	−0.09	−17.52	61 49 17.9	12.8
θ Canis Majoris.....	6 49 55.98	11	−0.16	−17.46	50 51 4.7	14.0

h		s
4.646..........	*dt*......................	−17.598
	Hourly rate............	+ 0.0617
		° ′ ″
	Adopted Equator Point..........	38 56 13.13

CLOCK TIME.	B.	t.	T.
h m	in.	°	°
2 41	30.01	59.0	58.2
3 34	30.00	58.3	57.4
4 12	30.00	57.9	57.1
4 42	29.99	57.7	57.0
6 5	30.00	57.1	56.3
6 52	30.01	57.0	56.1

REDUCTION TABLES FOR THE ZONE STARS.

No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*	No.	*a*	*A*	*D*	*R*
	s	s	″	″		s	s	″	″		s	s	″	″
1	−0.14	−6.78	+35.52	80.94	3	−0.15	−6.63	+29.50	76.44	5	−0.13	−6.16	+20.51	87.24
2	−0.15	−6.76	+32.96	75.55	4	−0.14	−6.36	+23.67	80.82	6	−0.15	−5.75	+ 0.42	76.46

a = Instrumental corrections.
A = *α* to 1900.0
D = Z. D. S. to 1900.0

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